

**Syllabi & Courses of Readings**  
for  
**BS Program**  
**5<sup>th</sup> to 8<sup>th</sup> Semester**  
in  
**GEOGRAPHY**  
**FOR AFFILIATED COLLEGES**  
**2021**



**DEPARTMENT OF GEOGRAPHY**  
**UNIVERSITY OF THE PUNJAB**  
**QUAID-E-AZAM CAMPUS LAHORE**

Scheme of studies for BS(5<sup>th</sup> to 8<sup>th</sup> Semester) Geography for affiliated colleges adopted as per HEC Curricula 2018 with minor modifications(w.e.f. Session 2021-2025 and onwards)

5th Semester			6th Semester		
Course Code	Course Title	Credit Hours	Course Code	Course Title	Credit Hours
Geog 301	Geographic Thought	3	Geog 307	Oceanography	3
Geog 302	Geomorphology	3	Geog 308	Research Methods	3
Geog 303	Climatology	3	Geog 309	Population Geography	3
Geog 304	Environmental Geography	3	Geog 310	Fundamentals of GIS	3
Geog 305	Quantitative Geography	3	Geog 311	Economic Geography	3
Geog 306	GPS and Levelling	3	Geog 312	Urban Geography	3
HQ-005	Translation of Holy Quran	0	HQ-006	Translation of Holy Quran	1
Total		18	Total		18

7th Semester			8th Semester		
Course Code	Course Title	Credit Hours	Course Code	Course Title	Credit Hours
Geog 401	Geography of Pakistan	3	Geog402	Digital Cartography	1+2
Geog 403-419	Elective Paper I*	3	Geog 403-419	Elective Paper III*	3
Geog 420-433	Elective Paper II*(Regional Geography)	3	Geog 403-419	Elective Paper IV*	3
Geog 433	Techniques in RS and GIS (Practical)	3	Geog 435	Field Study/Field Survey	6
Geog 434	Principles of Remote Sensing	3	Geog 436	Thesis (in lieu of two paper options)	(3+3)6
HQ-007	Translation of Holy Quran	0	HQ-008	Translation of Holy Quran	1
Total		15	Total		15

**1: General Courses**

- GC 111 Archaeology
- GC 112 Computer Science
- GC 113 Economics
- GC 114 Geology
- GC 115 History
- GC 116 Introduction to Environmental Science
- GC 117 Mass Communication
- GC 118 Political Science
- GC 119 Social Psychology
- GC 120 Sociology
- GC 121 Statistics
- GC 122 Botany

**2: Elective Papers: Geography Courses**

- Geog. 403 Agricultural Geography
- Geog. 404 Conservation of Resources
- Geog. 405 Cultural Geography
- Geog. 406 Natural Hazards & Disaster Management
- Geog. 407 Geography of Manufacturing
- Geog. 408 Hydro Geography
- Geog. 409 Medical Geography
- Geog. 410 Pleistocene Geomorphology
- Geog. 411 Political Geography
- Geog. 412 Regional Planning & Development
- Geog. 413 Rural Settlement Geography
- Geog. 414 Tourism Geography
- Geog. 415 Transportation Geography
- Geog. 416 Urban Environmental Management
- Geog. 417 Urban Ecology

**3: Elective Papers: Regional Geography:**

- Geog. 420 Africa: South of Sahara
- Geog. 421 Australia
- Geog. 422 Central Asia
- Geog. 423 Eastern Asia China, Japan & Korea
- Geog. 424 Europe
- Geog. 425 Geography of the Muslim World
- Geog. 426 North African Countries
- Geog. 427 North America

- Geog. 428 Russia
- Geog. 429 S. West Asia
- Geog. 430 South America
- Geog. 431 South Asia
- Geog. 432 South East Asia
- Geog. 433 China

**4: Field Study/ Surveys**

- Demographic Survey
- Hydrological Survey
- Industrial Survey
- Land Use Survey
- Landforms Survey
- Soil Survey
- Transportation Survey
- Urban Survey
- Tourism Survey

**Geog 436 Thesis (In lieu of two optional papers)**

**SEMESTER V**

**Geog. 301 Geographic Thought Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Years Programme, University of the Punjab, Lahore**

- **Development of Geographic Thought through the History.**
  - A general survey of the geographical work of Greeks and Romans.
  - Muslim contribution to Geographic Thought.
  - European Renaissance.
  - Geographic Thought in the Humboldt and Ritter era.
  - Ideas of Ratzel and Vidal de la Blache and their influence on European and American Geographic Thought.
- **Development of a Scientific Geography**
  - Scientific geographic approach as suggested by W.M. Davis, E.C. Semple, H.H. Barrows, and Carl O. Sauer.
  - The establishment of geographic paradigms, concepts, ideas, theories, laws, and methodology.
  - The development and use of quantitative techniques.
- **The Environmental Challenge**
  - Nature of Eco-Systems
  - The Global Environment
  - Environmental risks and uncertainties

- **Human Ecological Response**
  - The Human Population
  - Resources and Conservation
  - Our role in changing the face of the earth
  - Cultural fission: towards regional divergence
- **Regional Mosaics**
  - Cultural Fission: Toward Regional Divergence
  - World Cultural Regions: The Emerging Mosaic
  - Spatial diffusion: Toward regional convergence
- **The Area-analysis Tradition in Geography**
  - Urbanization: Origin Pattern and Factors of Urbanization
  - City Chains and hierarchies
  - Territories and boundaries
  - Rich countries and poor
  - Inequalities within countries
- **New Directions in Geography**
  - Computers in Geography
    - a) Automated Cartography
    - b) GIS
    - c) Remote Sensing
    - d) GPS
  - Geography of Tourism and Recreation

**Books Recommended:**

- 1) Ahmad, K.S., (1964) "Geography through the Ages", PGR 1964
- 2) Ahmad, Nafis, (1947) Muslim Contribution to Geography, Lahore.
- 3) Brown, E.H. (1980) Geography, Yesterday and Tomorrow, Oxford University Press London.
- 4) Blif, Harm, J. ed., (1971) Geography, Regions and Concepts, John Wiley and Sons, Inc. US.A
- 5) Board, C. et. al., (ed.), (1969) Progress in Geography, Vol. 1, Edward Arnold Publishers Ltd. London.
- 6) Choreley, R. J. (1973) Directions in Geography, Methuen and Co. Ltd. London.
- 7) Dikshit R. K. (1998) Geographical Thought Prentice Hall, India.
- 8) Dickinson, R.E., and Howardth, C.J.R., (1933) The making of Geography, Clarendon Press Oxford.
- 9) Hagett, P., (1978) Geography a Modern Synthesis, Third edition. New York.
- 10) Dickinson, R.E. (1969) The Makers of Modern Geography, Frederick A. Praegar Inc. New York.
- 11) Freeman, T.W., (1961) Hundred Years of Geography, London.
- 12) Hartshorne, R., (1949) The Nature of Geography, N.T. Association of American Geographers New York.

**Geog. 302                      Geomorphology                      Cr. Hours (03)**  
**BS Geography 4 Years Programme, University of the Punjab, Lahore**

- **Introduction**

- Definition and Scope

BS Geography w.e.f. Academic Session 2020-2024 and onward

- Development of Science of Geomorphology
- Muslims Contribution to the Science of Geomorphology
  
- **Models of Landform Development**
  - Structural Landform
  - Weathering Landforms
  - Erosional Landforms
  - Depositional Landforms
  
- **Geomorphic Process**
  - Endogenetic Processes
  - Exogenic Processes
  - Extraterrestrial Processes
  
- **Weathering**
  - Physical Weathering
  - Chemical Weathering
  - Biological Weathering
  
- **Mass Wasting**
  - Slow Flowage Type
  - Rapid Flowage Type
  - Subsidence
  
- **Glacier**
  - Genesis and Motion
  - Classification
  - Nourishment and Wastage
  - Erosional and Deposition Landforms
  
- **Fluvial Processes**
  - Fluvial Cycle
  - Rejuvenation
  - Idealised Fluvial Cycle
  - Complications of the Field Cycle
  - Drainage Pattern
  
- **Arid Cycle and Aeolian Landforms**
  - Forms of Wind Erosion
  - Wind Transportation
  - Wind Deposition
  - Karst Topography
  - Development of Karst Landscape
  - Characteristic of Karst Features
  
- **Quantitative Geomorphology**

- Methods of Geomorphological Investigation
- Morphometric Analysis
- Material Properties
- Process and Evolution
- **GIS and RS Applications**
  - Data Acquisition
  - Digital Terrain Modelling
  - Feature Extraction

**Books Recommended:**

1. Aronoff, S. 1995 Geographic Information Systems: A Management Perspective, Wdl Publications, Ottawa, fourth edition Canada
2. Cotton, C.A. 1949 Geomorphology An Introduction to the Study of Landform, John Wiley New York.
3. Drwry S.A. 1990 A Guide to Remote Sensing and Image Processing, University Press Oxford.
4. Englen O.D.V. 1942 Geomorphology, Macmillan New York
5. John. R.J. 1996 Introduction to Digital Image Processing. Prentice Hall.
6. Lobeck, A.K. 1939 Geomorphology, Macmillan New York.
7. Sparks, B.W. 1986 Geomorphology, Longman London.
8. Steers, J.A. 1964 Unstable Earth.
9. Thomas M. Lillesand & Ralph W. Kiefer 2004 Remote Sensing and Image Interpretation. John Wiley & Sons Inc.
10. Thornsby, W.D. 1983 Principles of Geomorphology, John Wiley New York
11. Paul J. Curran, 1985 Principles of Remote Sensing. Longman Group Ltd.
12. Wooldrige S.W. 1966 An Outline of Geomorphology, Physical Basis of Geography, Longman.

**Geog. 303                      Climatology                      Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction to Climatology**
  - Development of the science of Climatology
  - Definition, Scope and Study methods
  - Climatic Data Collection, Presentation and Analysis
- **Elements and factors of Climate**
  - Structure and Composition of Atmosphere
  - Insolation and Temperature
  - Air pressure and Winds
  - Air Masses and fronts
  - Condensations and Precipitation
  - Cyclones and Weather Disturbances
- **Classification of Climates**

- Critical study of the Koppen, Miller and Thornthwaite
- Classification of major climates,
- Climatic Types; their characteristic features and geographical distribution
- **Climatic Changes and Variability**
- **Principles of micro-climatology and its application in Pakistan**
  - Applied Climatology and its application in Pakistan
  - Intentional weather modification
- **Introduction to Climate Modeling**
  - Climate Modeling and Parameterization
  - Atmospheric General Circulation modeling
  - sensitivity experiments and applications
  - Future prospects
- **Climate and Climatic Regions of Pakistan**

**Books Recommended:**

1. Miller A.; 2001 Climatology, Methuen New York.
2. Murry; 2000 The Ocean, McGraw Hill New York.
3. Barry. R.; 1998 Atmosphere, Weather and Climate (7th ed.) London: Clays St. Davis.
4. Strahler, A. N; 1998 Elements of Physical Geography, John Wiley New York.
5. Thompson, R.; 1997 Applied Climatology, Principles and Practice Routledge Canada.
6. Johnson H.; 1996 An Introduction to Oceanography.
7. Graedel, T.; 1995 Atmosphere, Climate and Change, Scientific American Library, New York.
8. Whyte, I; 1995 Climatic Change and Human Society Arnold Division London.
9. Byers, H. R.; 1993 General Meteorology, McGraw Hill New York.
10. Lamb, H ;1992 Climate History and the Modern World Methun & Co. Ltd. London.
11. Trenberth, K.; 1992 Climate System Modeling, McGraw Hill New York.
12. Critchfield, H.J.; 1991 General Climatology, Prentice Hall New Delhi.
13. Macleeven J.F.; 1991 Fundamentals of Weather and Climate, Chapman & Hall London.
14. Stringer, E.T.; 1989 Foundation of Climatology, Surjeet Publishers New Delhi.
15. Shamshad, K.M.; 1988 The Meteorology of Pakistan, Royal Book Co. Karachi.
16. Sellers, A. & Henderson, A.; 1986 Contemporary Climatology, Longman London.
17. Oliver, J.; 1981 Climatology: Selected Applications: Edward Arnold USA.
18. Trewartha, G.T; 1965 An Introduction to Climate, McGraw Hill New York.
19. Kendrew, W.G.; 1959 Climatology, 3rd ed. University Press Oxford.
20. Shapley, H.; 1960 Climatic Change, Evidence, Causes & Effects, Harward University Press Cambridge.
21. Petterson, S.; 1951 Introduction to Meteorology, McGraw Hill New York.
22. Haurwitz, B & Austin, J. 1944 Climatology, McGraw Hill New York.



**Geog. 304 Environmental Geography Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction**
  - Scope of the subject
  - Its importance, nature of environments
  - The Structure of Ecosystems
  - Ecosystem Functions
  - Environmental Problems and the Principles of Ecology
- **Material Cycles**
  - The Hydrological Cycle
  - The Atmosphere Cycles
  - Lithospheric Cycles
  - Nitrogen Cycle
- **Energy: Sources and Uses:**
  - Energy Sources
- Energy Alternatives for the Future: Petroleum, Natural Gas, Solar Energy, Atomic Energy, Hydroelectric Power
- **Soil resources**
  - soil components; Profile and characteristics
  - Soil classification
  - Use and misuse of soil management and conservation
- **Mineral and Water Resources**
  - Mineral Resources and Reserves
  - Water Resources:
  - Conflicts in the uses of water by urban, rural, agricultural, power, industrial and recreational agencies
  - Problems created by shortage/excess of water
  - Water pollution and water treatment by industries
- **Water Pollution**
  - Types of Water Pollutants
  - Sources of Water Pollution
  - The Impact of Water Pollution on Human Health, Animals and Plants
  - Water Pollution Control and Treatment
- **Air Pollution and their Sources:**
  - The Sources of Air Pollution
  - The Factors of Air Pollution
  - The effects of Air Pollution on Human Health
  - The Effects of Air Pollution on Climate
- **Noise Pollution**

- Noise Pollution:
- Sources of Noise Pollution
- The Effects of Noise Pollution
- **Major Environmental hazards and Problems:**
  - Earth Quake
  - Floods
  - Deforestation
  - Environmental Pollution

#### **Books Recommended :**

1. Briggs, D. & Courtney, F. 1989 Agriculture and Environment: The Physical Geography of temperate Agricultural Systems, Longman, Singapore
2. Buchman, Harry O. The Nature and Properties of Soils, Macmillan New York.
3. Bunting, B. T. 1967 The Geography of Soil Hutchinson University Library London.
4. Cornelius T.T. & Harold Environmental Education, John Wiley.
5. Eyre, S.R. 1968 Vegetation and Soils, Edward Arnold London.
6. Hamm, R.L. & Nason, 1964 An Ecological Approach to Conservation, Minneapolis: Burgess Publishing Co.
7. Kuiper, E. 1965 Water Resources Development, Planning, Engineering and Economics, Butterworths, London.
8. Kupchella, C. E. and Hyland, M. C. (1989): Environmental Science: Living Within the system of Nature, Prentice Hall, New Jersey.
9. Miller, C.E. Fundamentals of Soil Sciences, 2<sup>nd</sup> ed. John Wiley New York.
10. Nebl, B. J. 1999: Environmental Science, Prentice Hall, New Jersey.
11. Nebl, B. J. & Wright, R. T. 1998: Environmental Science The Way the world Works, Prentice Hall, New Jersey.
12. O'Hare, G. 1992: Soils, Vegetation, Ecosystems, Oliver & Boyd, London.
13. Odum, Eugene P. Fundamentals of Ecology, Saunders London.
14. Simmons I.G. The Ecology of Natural Resources, Edward Arnol.
15. Trivedi, P. R. & Raj, G. 1992: Concepts in Environment, Akashdeep, New Delhi.
16. Trudgill, S. T. 1977 Soil and Vegetation Systems: Clarendon Press Oxford.
17. Wellburn, A. 1994: Air Pollution and Climate Change: The Biological Impact, Longman, Singapore.
18. White, I. D., Mottershead & Harrison, S. J. 1992: Environmental System: An Introductory Text, Chapman & Hall, London.

**Geog. 305                      Quantitative Geography                      Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction**
  - Statistical Methods and the Geographers.
  - The nature of Geographical Data and Measurement Scales.
- **The Mathematical Basis of Statistics.**
- **The Collection and Presentation of Data**
  - Methods of Data collection.
  - Major problems in collection of Data.
  - Presentation of Data : Tabulation, Frequency Distribution, Histogram, Frequency Polygon, Frequency Curve, Ogive, Bar charts and pictograms.
- **Summarizing Data**
  - Measures of Central Tendency : Arithmetic Mean, Median, Mode, Quantiles. Measures of Dispersion : Range, Semi Interquartile Range, Mean Deviation, Standard Deviation, Standard Score.
- **Measures of Variability**
  - Relative Variability, Coefficient of Variation.
  - The Lorenz Curve.
  - The Gibbs Martin Index of diversification.
  - The Ternary Diagram.
- **Time Series**
  - Graphs.
  - Growth and decline.
  - Index numbers.
  - Logarithmic Scales.
  - Trends and fluctuations.
  - Trend lines by least-squares method.
  - Trend lines for exponential (i.e.,) logarithmic series.
- **Correlation**
  - The product moment correlation coefficient(r)
  - Spearman's rank correlation coefficient
  - The correlation matrix.
- **Regression**
  - Dependent and independent variables.
  - Scattergrams, regression lines and residuals.
  - Interpolation, prediction and explanation.
  - Methods of constructing regression lines.

**1. Books Recommended :**

2. Ackerman, Edward A.; 1958 Geography as a Fundamental Research Discipline, University of Chicago Press, Chicago.
3. Croxton, F.E. & Cowden, D.J.; 1955 Applied General Statistics Isaac Pitman, London.
4. Ebdon, D.; 1977 Statistics in Geography, Basil Blackwell Oxford.
  - a. Gay L. R.; 1992
5. "Educational Research: Competencies for Analysis and Application" Fifth edition, Macmillan Publishing Company,
6. Gee, W. 1950 Social Science Research Method, Appleton Century Crofts, Inc. New York.
7. Gregory, S.; 1973 Statistical Methods and the Geographers, Longman London.
8. Hammond, R.E. Mc. Cullagh; 1978 Quantitative Techniques in Geography, Clarendon Press, Oxford.
9. Hartshorne, R. Perspective on the Nature of Geography, John Murray London.
10. Huff, D.; 1973 How to Lie with Statistics, Hammonds-worth, Penguin.
11. James, P.E. & Jones C.F ; 1954 American Geography, Inventory & Prospects, University Press, Syracuse.

**Geog. 306                                      GPS and Leveling                                      Cr. Hour (03)**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction to GPS Technology**
  - Types, Performance and Errors
  - Use & Applications
- **Leveling**
  - General description kinds of levels
  - Adjustments in levels
  - Procedure of leveling
  - Methods of calculating reduced levels.
  - Profiles and longitudinal leveling
  - Cross sectional leveling
  - Accuracy required in leveling operation.
  - Advantages and sources of error in leveling procedure.
  - Contours by clinometers
  - Tangent scale clinometers use with Plane Table laying out of contours

**Books recommended:**

1. Breed, C.B. & G.L. Hosmer (1953): Surveying. John Wiley & Sons.
2. Brinker R.E. & W.C. Taylor (1962): Elementary Surveying, The International Text Book Company.
3. Clendinning, J. (1960): Principles of Surveying. Blackie and Sons, Limited Glasgow,
4. Kanetkar, T.P. & S.V. Kulkarni (nd): Surveying and Leveling part-I. Union Book Stall Karachi.
5. Maginr D. J (1991):. Geographic Information System. Longman London
6. Rubey, H. et .al (1958): Engineering Surveys. The Macmillan Company.
7. Thomas W.N. (1942): Surveying, John Wiley and Sons.
8. Usili G.W. (1960): Practical Surveying. The Technical Press Ltd.

## SEMESTER VI

Geog. 307 Oceanography Cr. Hours (03)**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- Introduction to Oceanography
  - Historical overview of oceanography
  - Scope and significance of oceanography
- Origin and Structure of Ocean Basins
  - Origin of ocean basins
  - The permanency of the ocean basins and related theories
  - The origin of ocean water
  - Changes in sea level during the Tertiary and Quaternary periods
- The Floors of Oceans
  - The Physiography of the ocean floor
  - Geologic differences between continents & ocean basins
  - Characteristic features of ocean basins
  - Marine sedimentation
- The Circulation of the Oceans
  - Ocean Currents
  - Waves and tides
  - Oceanic storms and disturbances
  - The Ocean Resources
  - Law of the sea
  - Mineral Resources
  - Biological Resources
  - Marine Energy
- The Geographical Significance of the Oceans
  - Interaction of ocean and atmosphere
  - The changing sea level
  - Oceans in exploration and transport
  - The strategic role of oceans
- Oceans and Seas of the World

**Recommended Books:**

1. Barnes, H. (1959) Apparatus & Methods of Oceanography, London; 1<sup>st</sup> Edition. George Allen & Unwin Ltd.
2. Duxbury, A.B & Duxbury, A.C. (1994) An Introduction to the World Oceans. Oxford; 4<sup>th</sup> Edition. WMC Brown Publishers.

3. Duxbury, A. B. & Duxbury, A.C. (2001) Fundamentals of Oceanography. London; 2<sup>nd</sup> Edition. WMC Brown Publishers.
4. King, C.A.M. (1962) Oceanography for Geographers. London; 1<sup>st</sup> Edition. Edward Arnold Publishers, Ltd.
5. Pinet, P.R (2002) Invitation to Oceanography. London; 3<sup>rd</sup> Edition. Jones & Bartlett Publishers.
6. Summerhayes, C.P. & Thorpe, S.A. (1998) Oceanography – An Illustrated Guide. London; 2<sup>nd</sup> Edition. Monson Publishing Ltd.

**Geog. 308: \_\_\_\_\_ Research Methods \_\_\_\_\_ Cr. Hours (03)**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction to Research.**
  - Meaning, definitions and scope of research.
  - Methods of research
  - Objectives and purposes of research.
  - Application of research method in geography.
  - Advanced research in geography.
- **Types of Research.**
  - Basic versus applied research.
  - Historical research.
  - Descriptive research.
  - Correlational research.
  - Causal – comparative research.
  - Experimental research.
  - Qualitative and quantitative research.
- **Research Problem**
  - Selection.
  - Sources.
  - Characteristics/Criteria.
  - Statement of problem.
- **Review of Related Literature**
  - Definition, purpose and scope.
  - Preparation.
  - Sources.
  - Abstracting.
  - Reporting.
- **Research Hypothesis or Question**
  - Definition and purpose.
  - Characteristics.
  - Types of hypotheses.
  - Stating the hypothesis/question.

- **Research Plan and Objectives**
  - Formulation of research plan or research design.
  - Formulating research objection.
- **Sampling**
  - Definition and purpose.
  - Types/Techniques of sampling.
  - Sampling techniques and geographic research.
- **Research instruments.**
  - Purpose of research instruments.
  - Characteristic of research instruments.
  - Types of research instrument.
    - I. Questionnaire.
    - II. Interviews.
    - III. Observation.
    - IV. Documents.
    - V. Tests.
    - VI. Important tools for geographic research.
- **Collection and Analysis of Data.**
  - Data collection.
  - Tabulation of data.
  - Data analysis.
  - Interpretation of data.
  - Statistical techniques and data analysis.
  - Data collection and analysis in geographic research.
- **Writing Research Proposal and Report**
  - General rules for writing and typing.
  - Format and style.
  - Types of research reports.
  - Evaluation of research report.
  - Theses and dissertation.
  - Journal's articles.
  - Paper read at professional meetings.

#### **Recommended Books:**

1. Ackerman, Edward A.; 1958 Geography as a Fundamental Research Discipline, University of Chicago Press, Chicago
2. Croxton, F.E. & Cowden, D.J.; 1955 Applied General Statistics Isaac Pitman, London.
3. Dr. K. L. Narasimha Murthy (1992) Research in Geography: A Survey 1<sup>st</sup> Edition; Ashish Publishing House, New Delhi.
4. Ebdon, D.; 1977 Statistics in Geography, Basil Blackwell Oxford.

5. "Educational Research: Competencies for Analysis and Application" Fifth edition, Macmillan Publishing Company,
6. Gee, W. 1950 Social Science Research Method, Appleton Century Crofts, Inc. New York.
7. Gregory, S.; 1973 Statistical Methods and the Geographers, Longman London.
8. Hammond, R.E. Mc. Cullagh; 1978 Quantitative Techniques in Geography, Clarendon Press, Oxford.
9. Hartshorne, R. Perspective on the Nature of Geography, John Murray London.
10. Huff, D.; 1973 How to Lie with Statistics, Hammonds-worth, Penguin.
11. James, P.E. & Jones C.F ; 1954 American Geography, Inventory & Prospects, University Press, Syracuse.
12. James, P.E. New View Points in Geography, National Council for the Social Studies Washington.
13. Keith Hoggart, Loretta Lees & Anna Davies (2002) Researching Human Geography, Arnold Publishers, London, 1<sup>st</sup> Edition
14. Martyn Densombe (2003) The Good Research Guide: for Small Scale Social Research Projects. 2<sup>nd</sup> Edition, Open University Press Phila Delphic.
15. Nicholas J. Clifford & Gill Valentinc ( ) Key Mthods in Geography, Sye Publications, London, 1<sup>st</sup> Edition, (2003).
16. Norcliffe, G.B.; 1977 Inferential Statistics for Geographers Hutchins London.
17. Plate, R.S.; 1959 Field Study in American Geography, Illinois, University Press Chicago.
18. Researchin Education by John W. Best & James V. Kahn, 7<sup>th</sup> Edition (2003) 7<sup>th</sup> Edition Printice Hall Private Ltd. New Delhi.
19. Therese L. Baker (1999) Doing Social Research, 3<sup>rd</sup> Edition Boston; McGraw Hill.
20. Taylor, P.J.; 1977 Quantitative Methods in Geography, Houghton Mifflin Boston.
21. Walker; 1963 The Nature of Scientific Thought, Prentice Hall New Jersey.
22. Wright ; 1951 Aids to Geographical Research, Columbia University Press NewYork.
23. Young, P.V.; 1956 Scientific Social Surveys & Researches, Prentice Hall New York.

**Geog. 309                      Population Geography                      Cr. Hours (03)**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Nature and Scope of Population Geography**
  - Historical outline of World Population growth
  - Importance and Development of Population Geography
  - Different views and theories
  - Relations of the subject to other discipline
- **World Distribution of Population**
  - Diversity of distribution
  - Factors influencing population distribution physical factors, cultural and technological factors, temporal and political factors
- **Measures of Population Distribution**
  - Advantages and disadvantages of arithmetic density
  - Physiological and economic densities of population
  - Measures of central tendency of population distribution



- Measures of population dispersion and potential
- **Population Composition**
  - Urban and rural character
  - Biological characteristics
  - Cultural characteristics
- **Components of Population Growth**
  - Patterns and trends of fertility
  - Patterns and trends of mortality
  - Causes and consequences of migration
- **Problems of Population Data**
  - Sources of population data
  - Methods of Census, vital registration and sample surveys
  - Major errors and omissions in population data
- **Population Analysis**
  - Analysis of fertility
  - Analysis of mortality
  - Analysis of migration

**Books Recommended:**

1. Barrette, J. & Louw, M. 1962. International Aspects of Overpopulation, London, Macmillan.
2. Barclay, G. W. 1958. Techniques of Population Analysis, John Wiley & sons, New York.
3. Clarke, J.I 1965. Population Geography, Pergamon Press Oxford.
4. Demko, G. J & Rose H. M. & Schnell, G. A.1970. Population Geography: A Reader, McGraw Hill Book Company New York.
5. Glass, D.V. 1967. Population; Politics and Movements in Europe, Frank Cass & Co. London.
6. Garnier, J. B. 1966. Geography of Population, Longman, London.
7. Heer, D. M 1968. Readings on Population, Cliffs Prentice Hall, Inc. Englewood.
8. Matras, J. 1977. Introduction to Population: A Sociological Approach, Cliffs, Prentice Hall, Englewood.
9. Zelinsky, W. 1966 A Prologue to Population Geography, Cliffs, Prentice Hall, Inc. Englewood.

**Geog. 310: Fundamentals of GIS Cr. Hour (03)**  
**BS Geography 4 Years Programme, University of the Punjab, Lahore**

- **Introduction to GIS:**
  - Definition
  - Components of GIS
- **Spatial Data:**
  - Introduction
  - Types
  - Sources
- **GIS Data Structures:**
  - Introduction

- Digital file structures: Simple lists, Ordered Sequential Files, Indexed Files
- Digital database structures for Managing Data: Hierarchical Data Structures, Network systems, Relational Database Management Systems
- GIS Data Models for Multiple Coverages: Raster Models, Compact storing of Raster Data, Vector Models, Compacting Vector Data Models, Hybrid and Integrated Systems
- **Spatial Data Modeling:**
  - Introduction
  - Spatial data models
  - Spatial data structures
  - Modeling surfaces
  - Modeling networks
  - Modeling third and fourth dimensions
- **Attribute Data Management:**
  - Introduction
  - Creating a database
  - Integrating database
  - Development in database
  - GIS database applications
- **Spatial Data Input and Editing**
  - Introduction
  - Methods of Data Input
  - Data Editing
  - The Importance of Editing GIS Database
  - Detecting and Editing Errors
  - Projection Changes
  - Edge Matching
  - Conflation and Rubber Sheeting
  - Integrated databases
- **Spatial Analysis: Techniques of spatial analysis**
- **GIS Output:**
  - Display of Analysis
  - Cartographic output
  - Map design controls
  - Nontraditional Cartographic output
  - Technology and GIS output
- **GIS Project Design and Management:**
  - Introduction
  - Problem identification

- Designing a data model
- Project management
- Implementation problems
- Project evaluation

### **Books Recommended :**

1. Environmental Systems Research Institute (ESRI) 1993: Understanding GIS: The ARC/INFO method. John Wiley & Sons, New York.
2. Found, W. C. 1971: A theoretical approach to rural land-use patterns. Edward Arnold London.
3. Garnett, A. 1945: The interpretation of topographical maps, Ltd., George G. Harrap & Co. London.
4. Huxhold, W.E. 1991: An Introduction to Urban Geographic Information Systems, Oxford University Press. Oxford.
5. Johson et al. 1992: Geographic Information System and Mapping, American Society for Testing and Materials.
6. Lillesand, T. M. & Kiefer, R. W. 1994: Remote Sensing and Image Interpretation, John Wiley & Sons, New York.
7. Lo, C. P. 1976: Geographical Applications of Aerial Photography, Crane Russak, New York
8. Lyon J. G. & McCarthy J. (edit) 1995: Wetland and Environmental Applications of GIS, CRC Press Inc, USA.
9. Masser, I. & Blackmore, M. 1991: Handling Geographic Information, Longman, London.
10. Mather, A. S. 1986: Land Use, Longman, London.
11. Mather, P.M. 1993: Geographical Information Handling - Research and Applications, John Wiley & Sons, New York.
12. Peuquet, D. J. & Marble, D. F. 1990: Introductory Readings in Geographic Information Systems Taylor & Francis London.
13. Rhind, D. W., Googchild, M. F. and Maguire, D. J. (edit) 1991: Geographical Information Systems: Principles and Applications, Longman Group UK.
14. Rhind, D. W., Googchild, M. F. and Maguire, D. J. (edit) 1991: Geographical Information Systems: Principles and Applications, Longman Group, UK.
15. Scholten, H.J. & Stillwell, C.H. 1990: Geographic Information Systems for Urban and Regional Planning, Kulwer Academic Publications.

**Geog. 311                      Economic Geography                      Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction**

- Definition
- Scope
- Approaches to Study
- Branches of Economic Geography
- Relationship with other Branches of the Geography

- **Economic Activities**
  - Classification
  - General Distribution
- **Production and Consumption**
  - Producer and Consumer
  - Decision Making
  - Man against Nature
  - Comparative Advantage
  - Perception
- **Historical Evolution of World Economic Systems**
  - Medieval Feudal Economics
  - Industrial Revolution
  - Economic Benefits from Colonialism
  - Modern World System
- **Various Types of Economic Activities**
  - Subsistence
  - Commercial
- **World Population and Urbanism**
  - Geographic Distribution of Population
  - Population Characteristics its Growth and Structure
  - The Demographic Transition
  - Population Density
  - Overpopulation
  - The Future Population
  - The Malthusian Dilemma
- **Agriculture, Forestry and Fishing**
  - Conditions of Agriculture
  - The Physical Constraints on Agriculture
  - Land Factors in Agriculture
  - Agricultural Systems
  - Problem and Policies in Agriculture
  - The Economic Status of Farmer Scarcity and Abundance
  - Types of Agriculture and their Distribution
  - The Role of Selected Commodities (Wheat, Rice, Sugarcane, Cotton, etc.)
- **Minerals and Mining**
  - Economic Factors in Mining
  - Metalliferous Minerals
  - Mineralized Regions

- The Size of the Reserves
- The Non-metallic Minerals
- Water as a Resource
- **Fuel and Power**
  - Forms of Power
  - The Solid Fuels
  - Oil and Natural Gas
  - Non-Exhaustible Sources of Energy
- **The Structure and Location of Industry**
  - Industrial Location Theory
  - Factors of Industrial Location
  - Locational Analysis of Selected Industries
    - a. Iron and Steel
    - b. Cotton Textile
    - c. Petroleum Refinery Industry
    - d. Industrial Regions
- **Trade and Services Functions**
  - Tertiary Activities
  - Distribution of Services
  - Service Industries and Central Place Theory
- **Transport and Trade**
  - Characteristics of Transport System
  - Networks
  - Modes of Transport
  - International Trade and Specialization
  - Multilateral and Bilateral Trade
  - Free Trade Areas and Common Markets
  - Balance of Trade
  - Terms of Trade
  - The Pattern of Trade

**Books Recommended:**

1. Alexander, J.W., 1963 Economic Geography, Prentice Hall New Jersey.
2. Alexanderson, G. 1947 Geography of Manufacturing, Englewood Cliffs,
3. Alnwick, H. 1981, A Geography of Commodities : Harrap London.
4. Atlas of the World's Resources, Agriculture Resources of the world, (latest) ed., by Royen W.V. 1954, Printice Hall New York.
5. Boesch, H. 1964 A Geography of World Economy, Princeton : D. Van Nostrand,
6. Boyee, R. R. 1947 The Basic of Economic Geography, Holt, Rinehart & Winston New York.

7. Carlson A. S, 1956 Economic Geography of Industrial Materials: Reinhold Publishing Corporation New York.
8. Fryer, D.W. 1965 World Economic Development, McGraw Hill New York.
9. Hartshorne T.A. & Alexander J.W. (1988) Economic Geography, Prentice Hall, Inc. Englewood Cliffs, New York.
10. Highsmith R.M. 1963, Geography of Commodity Production, Philadelphia, Lippincott.
11. Hodder, B.W. & Bogar Lee 1974, Economic Geography, Methuen London.
12. Hover, E. M., 1948 The Location of Economic Activity, McGraw Hill New York.
13. Jarrett, H.R. 1969, A Geography of Manufacturing, MacDonald & Evans Ltd. London.
14. Jones, C.F. & Darkenwald, 1965 Economic Geography, Macmillan New York.
15. Khan F. (1977). An Introduction to Economic Geography. Siur Syad Academy, Karachi.
16. London, C. E. 1939, Industrial Geography, Prentice Hall New York.
17. Miller & Willard 1962, A Geography, of Manufacturing, Englewood Cliffs, Prentice Hall
18. Norman P. (1981) Success in Economic Geography John Murray (publishers) Ltd.
19. Pounds, N. J.G. 1959, The Geography of Iron and Steel, Hutt Chinson University Library.
20. Prentice Hall, 1967, London.
21. Royen, W. V. 1953 Fundamentals of Economic Geography, Englewood Cliffs, Prentice-Hall.
22. Sadhukhamn S.K. (1986) Economic Geography, An Appraisal of Resources. S. Chand & Co. Ltd. New Delhi.
23. Smith J.R. 1955 Industrial and Commercial Geography, Henry Holt.
24. Thoman, Conkling and Yeats (1988) The Geography of Economic Activity Mc grew Hill Inc. USA.
25. Thomas, H. G. 1955, Using the World's Wealth: Ginn & Co. London
26. Thomas, R. S. 1965 The Geography of Economic Activity: McGraw Hill New York.
27. White C.L. & Griffin 1964: World Economic Geography, Blement; Wardsworth.
28. Zimmerman, E.W. 1951, World Resources and Industries, Henry Holt New York

**Geog 312: Urban Geography Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Introduction to Urban Geography**
  - Scope and Status of the Subject
  - Relation with other Branches of Geography
- **History and Growth of Urbanization**
  - Origin of Towns
  - Site and situation
  - Process of urbanization in the world
- **Urban function**
  - Economic base of urban centers
  - Formal and functional classification of towns
  - Towns as central place

- Urban hinterland
- **Urban structure-different theories**
  - hierarchy of settlements
  - city size distribution
  - rank size, law of primate city
  - urban expansion
  - metropolitan decentralization
  - rural urban fringe-urban social life.
- Urban Planning
  - Concept and principles of Planning
  - History of Town Planning
  - ancient and medieval Modern Planning
  - urban development urban renewal
  - neighbourhood planning.
  - A study of the process of urbanization in Pakistan.

**Books Recommended:**

1. Dickinson, R.E. (1952) City Region and Regionalism, London, Routledge.
2. Gist, N.P. & Halbert (1950) Urban Society, New York, Thomas Crowell Co.
3. Golany, G. (1976) New Town Planning, Principles and Practices.
4. Jackson (1966) Surveys for Town Country Planning, London, Hutchinson University.
5. Keeble, L. (1969) Principles and Practice of Town and Country Planning, London, The Estate Gazette.
6. Mayer H.M. & Kohn C.F. (1959) Readings in Urban Geography, Chicago, University of Chicago Press.
7. Smailes, A.E. (1966) The Geography of Towns, London, Hutchinson and Co.

## SEMESTER VII

**Geog 401. Geography of Pakistan Cr. Hours (03)****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Physical Environments**
  - Landforms and soils
  - Drainage
  - Climate and climatic regions
  - Natural vegetations
- **Resource Base**
  - Land resources
  - Water resources: Irrigation and irrigation problems, water logging and salinity and reclamation of land.
    - I. Soil erosion
    - II. Agricultural methods – problems and development Land Management
    - III. Distribution of main crops and cropping pattern
- **Pastoral resources**
- **Power resources:**
  - Fossil fuels: Oil, Natural gas, Coal
  - Non-Fossil fuels: Hydro-electric powers, Nuclear power
  - Role of Power Resources in the Economic Development
    - I. Mineral Resources
    - II. Forest Resources
    - III. Fisheries
- **Industries**
  - Industrial development
  - Industries
  - Factory industries
  - Cottage industries
- **Population**
  - Growth of population and its distribution
  - Age and sex composition
  - Movements of population
  - Urban and rural population-distribution in size class towns and settlements
  - Occupational structure
  - Food resources and its relation to population growth
- **Transportation and its development**
  - Means of Transportation and their evolution
  - Suitability and efficiency of various means of transport



- **Trade**
  - Foreign
  - Inter-Regional

**Books Recommended:**

1. Akhtar S.M. 1963. Economics of Pakistan, Publishers United Lahore.
2. Ali, M.A., 1967. The Emergence of Pakistan, Columbia University Press, New York.
3. Andrus; M. 1958. Economy of Pakistan Karachi University Press, Oxford.
4. Callard, K. 1955. Pakistan: A Political Study, Allan, London.
5. Davis, K. 1951 Population of India and Pakistan, Princeton, New York.
6. G.O.P. Directory of Economic Minerals of Pakistan.
7. G.O.P. Planning Commission: I-Five Year Plans.
8. G.O.P. Pakistan Economic Commission Manager of Publications, Karachi.
9. G.O.P. Chronology of Pakistan: Manager of Publications, Karachi.
10. G.O.P. Ministry of Home Kashmir Affairs: Census of Pakistan Population 1951, 1961 1972 Manager of Publications, Karachi.
11. G.O.P. Economic Survey of Pakistan, Finance Division, Economics Advisor's Wing. Various issues, Islamabad.
12. Howard, 1924 Crop Production in India: A Critical survey of its problems, University Press, Oxford.
13. Khan, M. A. 1967 Friends Not Masters, Karachi, University Press, Oxford.
14. Kureshy, K.U. 1977 Geography of Pakistan, Oxford University Press, Karachi.
15. Mushtaq, A. 1959 The Economy of Pakistan: Pakistan Publishing House, Karachi.
16. Spate O.H.K. 1957 India and Pakistan, Methuen, London.
17. G.O.P. Irrigation Dept: Annual reports, Institute of Irrigation & Research, Lahore.
18. Qureshi, I. H. 1965 The Struggle for Pakistan, University of Karachi, Karachi.
19. Qureshi, I.H. 1956 The Pakistan Way of Life, Harisman, London.
20. Tayyeb, A. 1966 Pakistan : A Political Geography Karachi : University Press, Oxford.
21. Wadia, D.N. 1957 Geology of India, Macmillan London.
22. WAPDA General Report of Hydrology and Climatology, Faridkot House, Lahore.
23. Weekes, R.V. 1964 Pakistan, D. Van Nostrad, New Jersey.
24. Wilcox, W.A. 1963 Pakistan, Columbia University Press, New York.

**Geog 403-415. Elective Paper I**

**Geog 420-432. Elective Paper II (Regional Geography)**

**Geog. 433 Techniques in RS and GIS (Practical) Cr. Hours (03)**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **GIS Lab. Work:**
  - Introduction to GIS Lab (hardware/ software),
  - Raster/Vector/Attribute Data Display, Scanning, Digitization,

- coordinate based point mapping,
- Raster/ Vector Conversion,
- Data layer integration and display of different projections,
- Map layout,
- Data Classification and Thematic Mapping,
- Handling of Topological Errors,
- Overlay and network analysis.
- **RS Lab Work:**
  - Introduction to labs.,
  - single band image interpretation,
  - false color predictions, false color composite images interpretation,
  - visual interpretation of aerial photographs,
  - various sensors data comparison,
  - thermal infrared image interpretation,
  - introduction to ERDAS imagine,
  - display, geo-linking, identification of targets, field trips.

**Geog 434. Principles of Remote Sensing**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- **Course Outline:**
  - Definition and History,
  - Physical Basis (EM Spectrum, Energy Interaction, Spectral Reflectance Curves, Image Characteristics)
  - Introduction to Aerial Photography,
  - Sensor Systems (Space and airborne, MSS, TM, ETM, HRV, LISS, IKONOS-2, Quick bird-2, AVHRR and others),
  - Platforms (Types and Orbital Characteristics),
  - Thermal Infrared (Characteristics, TIR Band Properties, TIR Image Interpretation, Intro to Microwave (Importance and applications),
  - Digital Image Processing (Over view of computer based image processing),
  - Applications (agriculture, urban, natural resources etc.)
- **Lab Outline:**
  - Introduction to labs,
  - Single band image interpretation,
  - False color predictions, False color composite Images Interpretation
  - Visual Interpretation of aerial photographs,
  - Various sensors data comparison,
  - Thermal Infrared Image interpretation,
  - Introduction to ERDAS Imagine, display, Geo-linking, Zooming,

- Identification of targets,
- FIELD TRIP

**Book Recommended:**

1. Campbell, James B. (2002). Introduction to Remote Sensing, 3rd Ed., (The Guilford Press) ISBN # 0-7484-0663-8 (pbk).
2. Gibson, P.J (2000). Introductory Remote Sensing: Principles and Concepts (Routledge), ISBN 0-415-19646-9
3. Jensen, J. (2000) Remote Sensing of the Environment: An Earth Resources Perspective, Amazon Publishers,
4. Lillesand, T. M. and Kiefer, R. W. (2004). Remote Sensing and Image Interpretation, 5th edition. (John Wiley and Sons), ISBN 0-471-15227-7
5. Mather, P M (2004). Computer Processing of Remotely Sensed Images, 3rd Ed. (John Wiley and Sons), ISBN 0-470-84919-3
6. Sabins, F.F (1996). Remote Sensing: Principles and Interpretation, 3rd ed, (W H Freeman & Co), ISBN # 0-7167-2442-1

**1. Journals / Periodicals:**

1. International Journal of Remote Sensing
2. Remote Sensing of Environment Journal
3. Photogrammetric Engineering & Remote Sensing Journal
4. Geo Carto International Journal
5. Asian Pacific Remote Sensing Journal
6. Canadian Journal of Remote Sensing

**SEMESTER VIII**

**Geog 402. Digital Cartography Cr. Hours (03)**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

- Spatial Analysis and Digital Image Processes (Practical).
- Quantitative Revolution and Digital Cartography
- Introduction to Visualization, Visualization Process, Visualization Strategies.
- Statistical and Visual Foundation
- Principles of Symbolization
- Principles of Color, Tri-Simulate(chromatic Model, Intensity, Hue and Saturation
- Map Design Process
- Mapping Techniques
- Cognitive, Social and Ethical Issues in Cartography and spatial data visualization
- Internet Mapping
- 3D Modeling
- Map Animation
- Virtual Reality
- Paradigm shift: 2D to 3D representation, (i.e. Digital Earth & Google Earth)
- Electronic Atlases and Multimedia Cartography
- Final Presentations

**Lab Outline and Practical**

- Exploration of visualization tools in digital environment, Thematic Mapping, Designing of point/nodes, line/arcs and area features/polygon symbols, Exercise: Color formation and Conversion (RGB, CMYK, IHS), Assignment: Cartographic Design and Reproduction (Example: Topographic Mapping), Mono, Bivariate and multivariate thematic Mapping, Assignment: War and Propaganda Maps, Map Server Application, Perspective Viewing, Multi-layer Draping and Fly Through, assignment.
- Assignments
- Exploration of visualization tools in digital environment
- Thematic Mapping both Raster/ Vector
- Designing of point/node, line/arc and area feature/polygon symbols
- Exercise: Color formation and Conversion (RGB, CMYK, IHS)
- Assignment: Cartographic Design and Reproduction (Example: Topographic Mapping)
- Mono, Bivariate and multivariate thematic Mapping
- Assignment: War and Propaganda Maps
- Map Server Application
- Perspective Viewing, Multi-layer Draping and Fly Through
- 3D Visualisation Assignment and Seminar

**Books Recommended:**

1. Aronoff, S. (2004) "Geographic Information Systems: A Management Perspective", WDL Publications, Ottawa, Fifth edition.
2. Chang, Krang-tung, (2002) "Introduction to Geographic Information Systems" McGraw Hill.
3. Ed Madej (2001) "Cartographic Design Using Arc View GIS", One Word Press, USA.
4. ITC (2000) "Principles of Geographic Information Systems" ITC Educational Textbook Series, Enschede, The Netherlands.
5. Kraak, M.J & Ormeling, F. (2004), "Cartography: Visualization of Spatial Data". Addison Wesley Longman. Second Edition.

**Geog 403-419 Elective Paper III****Geog 403-419 Elective Paper IV****Geog 435. Field Survey Report****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

The students shall carry out field Study/survey on any one of the following fields:

- Demographic Survey
- Hydrological Survey
- Industrial Survey
- Land Use Survey
- Landforms Survey
- Soil Survey
- Tourism Survey
- Urban Survey

Each student shall be required to collect data/information pertaining to his/her topic in a selected area/region, tabulate the data and write report on it.

**Books Recommended:**

1. Black, J. A. & Champion, D.J. (1967) Methods and Issues in Social Research, New York, John Wiley and Sons.
2. Boyce, J. & Ferretti, J. (1984) Field Work in Geography, Cambridge, Cambridge University Press.
3. Bruce, M. (1989) Geography and Resource Analysis, New York, Longman.
4. Carter, B. Eastwood, D. (1984) Worked Exercises in Physical Geography, Cambridge University Press Cambridge.
5. Chorley, R. J. & Haggett, P. 1975 Socio-Economic Models in Geography, London, Methuen.
6. Chorley, R. J. (Ed) 1973 Directions in Geography, London, Methuen.

7. Coward, J. Eastwood, D. (1984) Worked Exercises in Human Geography, Cambridge, Cambridge University Press.
8. Cressie, N. (1993) Statistical Analysis of Spatial Data, New York, John Wiley and Sons.
9. Hetlne, B. (1990). Development Theory and the Three World, London, Longman.
10. Jordan, T.G. & Rowntree, L. 1990. The Human Mosaic, New York, Harper & Row
11. Rao, M.S. (1993) Teaching of Geography, New Delhi, Anmol Publication.
12. Rogerson, P.A. (2001) Statistical Methods for Geography, London, SAGE Publications.
13. Worral, L. (1992) Spatial Analysis and Spatial Policy Using Geographic Information, New Delhi, CBS..

### **Geog 436. Thesis**

(In lieu of two optional papers in semester VIII)

#### **Elective Papers: Geography Courses**

#### **Geog. 403 Agricultural Geography Cr. Hours (03)**

##### **I- Introduction to Agricultural Geography:**

- i. Introduction
- ii. Nature and Scope
- iii. The Origins and Development of Agriculture
- iv. Theoretical aspects of Geographical Location relevant to agriculture

##### **II- Approaches to the Study of Agriculture in Geography:**

- i. Introduction
- ii. Approaches: Commodity, Regional, deterministic, systematic

##### **III- Factors Influencing Agricultural Patterns:**

- i. Physical Factors: The Terrain, Climate, Soil, Water Resources
- ii. Socio-Economic Factors: Technological, Population, Cultural, Infrastructure
- iii. Land, Labour and Capital
- iv. Government and Regional Policies

##### **IV- Models in Agricultural Geography:**

- i. The Nature and Need of Models
- ii. Classification of Models
- iii. Models of agricultural activity
  - a. Economic Models
  - b. Descriptive Models

##### **V- Agricultural Regions: Concepts and Techniques:**

- i. Concept and Methodology
- ii. Techniques: Normative, Empirical, Single Element, Statistical
- iii. Methods of Agricultural Regionalization
- iv. Data Classification and Distribution
- v. Agricultural Types

- vi. Agricultural systems of the World

#### **VI- Field Studies and Surveys:**

- i. Land Use Survey: Techniques of Land use survey
- ii. Land Capability Survey
- iii. Land Suitability evaluation Survey
- iv. Land Classification

#### **Books Recommended :**

1. Bowler, I. R. 1979 Government and Agriculture: a spatial perspective Longman London.
2. Bowler, I. R. 1985 Agriculture under the Common Agricultural Policy: a geography. University Press Manchester.
3. Bowler, I. R. 1992 The industrialization of Agriculture. In Bowler I. R. (ed). The Geography of Agriculture in Developed Market Economies. John Wiley & Sons, New York.
4. Briggs, D. J. & Courtney, F. M. 1989 Agriculture and Environment. Longman, Singapore.
5. Dube, R. S. 1987 Agricultural Geography: Issues and Applications, Gian Publishing House, Delhi.
6. Grigg, D. 1984 An Introduction to Agricultural Geography, Hutchinson, London.
7. Ilbery, B. W. 1985 Agricultural Geography: A social and economic analysis Oxford University press, Oxford.
8. Munton, R. J. C. & Morgan, W. B. 1971 Agricultural Geography, Methuen & Co., Cambridge.
9. Newbury, P. A. R. 1999 Agricultural Geography, Longman London.
10. Rhind, D. & Hudson, R. 1980 Land use, Methuen and Co. London.
11. Shukla, L. 1991 Readings in Agricultural Geography, Scientific Publisher, Jaipur.
12. Singh, J. & Dhillon, S. S. 1984 Agricultural Geography, Tata McGraw-Hill, New Delhi.
13. Symons, L. 1967 Agricultural Geography, Frederick New York.

### **Geog. 404 Conservation of Resources Cr. Hours (03)**

#### **I- Scope of the subject:**

Its importance, problems created by the expanding population; advancing technology, increasing standings of living and greater demand for space and goods thereof. Relation of subject to other disciplines.

#### **II- Agricultural Resources:**

Agriculture and man. Types of agriculture, agricultural land use and cropping pattern. Efficiency of agriculture, problems relating to agricultural land. Agricultural regions of the world.

#### **III- Animal Resources:**

Ranching and pasture, problems of overgrazing, carrying capacity of land, recent changes in ranching brought about by scientific agriculture feedlots and custom feeding, modern range management.

#### **IV- Problems of Human Population:**

Population distribution in different ecosystems, and different societies (with different technical skill), rate of growth of population. Relationship between man, his skills and natural resources.

Rural land planning in developed and developing countries. Differences in interpretation of resources. Control of population size, dangers of over population.

**Book Recommended:**

1. Courtney, P.P. 1965 Plantation Agricultural, G. Bell, London.
2. Laut, P. 1968 Agricultural Geography, Nelson, Melbourne.
3. Leakey, C.L.A. 1977 Food Crops of the Lowland Tropics: Oxford University Press London.
4. Steila, D. 1976 The Geography of Soils Formation, Distribution and Management, Cliffs Prentice Hall Englewood.
5. Symons, L. 1965 Agricultural Geography, Frederic A Preager New York.
6. Tempany, H. 1958 Tropical Agriculture, Longman London.
7. Webster, C.C. 1966 Agriculture in the Tropics: Long man, London.

**Geog. 405 Cultural Geography Cr. Hours (03)**

**I- Introduction:**

- i. Definition of Culture & Cultural Geography.
- ii. Scope of Cultural Geography & its relationship with other Disciplines.

**II- Basic themes of cultural geography:**

- i. Cultural Ecology
- ii. Cultural Diffusion
- iii. Cultural Regions/Area
- iv. Cultural Integration
- v. Cultural Landscape.

**III- Cultural History:**

- i. Paleolithic Age: Hunting & Gathering Culture
- ii. Neolithic Age: Agricultural World Revolution.
- iii. Industrial Revolution & Urbanization
- iv. Detailed Study of Stages of Social Cultural Change

**IV- Geo-Cultural Study of the following:**

- i. Religion
- ii. Language
- iii. Rural & Urban Communities

**V- Study of Pakistani Culture:**

- i. History, Present Patterns and Future Prospects.

**VI. CURRENT ISSUES:**

- i. Terrorism, Green Politics, Globalization, Human rights Revolution of Information, Gender Geography and Cultural problems.



**Books Recommended:**

1. Carter, G.F. 1964. Man and the Land: A Cultural Geography, Halt New York.
2. Fellmann, G.G. 1995. Human Geography Landscapes of Human Activities, WCB Publishers.
3. Forde, C. D. 1963 Habitat, Economy and Society, Methuen, London.
4. Blij H.J. 2000. Human Geography, John Wiley & Sons, Inc, Canada.
5. James M. R. 1998. The Cultural Landscape An Introduction to Human Geography, Merrill Publishing Co.
6. James, P. E. 1964. One World Divided, Blaisdel Publishing Co., New York
7. Johnston, R.J. et al. 1996. Geographies of Global Change, Blackwell Publishers Inc.
8. Leighly, J. 1965. Land and Life, Barkley; University of California Press.
9. Sauer, C. O. 1952 Agricultural Origins and Dispersal, American Geographical Society New York.
10. Quddus S. A. 1989. The Cultural Patterns of Pakistan, Ferozesons (Pvt.) Ltd., Lahore.
11. Terry G. J. Lester R. 2000. Human Mosaic, Harper Collins Publishers, New York.
12. Wagner, 1959. Readings in Cultural Geography, University of Chicago Press Chicago.
13. Wheeler, M. 1962. Indus Civilization University Press Cambridge.
14. White, L. A. 1959. Evolution of Culture, McGraw Hill New York.

**Geog. 406: Natural Hazards and Disaster Management Cr. Hours 03**

**Introduction**

NHDM is an inter and multi-disciplinary field of knowledge developed as a decision support science with convergence of a wide range of disciplines of natural, social, computational and management and sciences with philosophy and humanities. Therefore, its scope is as wide as the ambit of geography itself, which justifies its importance for students of Geography.

**Teaching Objectives**

The overarching aim of this course is to value addition in the scheme of studies of BS Geography programme. Whereas specific objectives are to:

- i) introduce students with basic concepts of natural hazards and disaster management and how it developed as an important academic discipline important to understand development issues in geographical context;
- ii) Enable students to decipher the dynamics and trickledown impacts of natural hazards on life support system of earth and enable them to strive for remedial measures.
- iii) Familiarize students with current challenges of sustainable development at local and global level.

**Learning Outcome**

- i) Learners become aware about the impacts of natural hazards on environment and human activities.
- ii) Learners acquired skills to contribute towards sustainable development.
- iii) To aware students with the orientation of natural hazards in present times.

**Course Outline****a) Introduction**

- Basic concept of natural hazards.
- Classification of natural hazards.

**b) Classification of Disasters**

- Natural Disasters
- Floods
- Desertification
- Anthropogenic Disasters
- Air pollution
- Water pollution
- Deforestation
- Qasi-natural Disasters
- Global Warming

**c) Significance of Disaster Planning and Management**

- Nature and Scope of Disaster Management
- Management and importance
- Disaster Management Cycle and its components

**d) Emerging Challenges and Disaster Management in Urban Areas**

- Eco-friendly Urban Growth
- Population Growth
- Sustainable Urban Management

**e) Sustainable Development and natural disasters**

- Concepts of Sustainable Development and Relationship between Disasters.
- Challenge for Pakistan

**Recommended Books:**

1. Environmental Science: Earth as a Living Planet, Botkin, D.B & Keller, E.A. 6<sup>th</sup> Ed. John Wiley & Sons, 2007.
2. Environmental Science: systems and solutions, McKinney, M.L., Schoch, R.M. & Yonavjak, L. 4<sup>th</sup> Ed. Jones & Bartlett Publishers, 2007
3. Environmental Science: Toward a Sustainable Future, Wright, R.T. & Nebel, B.J. 10<sup>th</sup> Ed. Pearson Educational, 2007.
4. Environmental Science: working with the Earth. Miller, G., Thomson Learning, 2002.
5. Comprehensive Risk Assessment for Natural Hazards. World Meteorological Organization 2006.
6. DAMON, P. C. (2006) International Disaster Management. Butterworth- Heinemann.
7. Khan A.N. (2016) Introduction to Hazards and Disasters. Al-Azhar Environmental planning and management, Peshawar
8. Rahman A. 2010. Disaster Risk Management: Flood Perspective. VDM Verlag Publishing Co. Ltd Germany, ISBN 978-3-639-29891-8, 192 Pages.

9. Rahman A. , K h a n A N . , S h a w R. (2015) D i s a s t e r R i s k Reduction Approaches in Pakistan. Springer Tokyo.
  10. Shaw R, Rahman A, Surjan A, Parvin GA. 2016. Urban Disasters and Resilience in Asia. Elsevier, New York.
  11. UNISDR. (2009). Global Assessment Report on Disaster Risk Reduction, United Nations International Strategy for Disaster Reduction.
  12. W. N. Carter (1999) Disaster Management: Disaster Manager's Handbook, Manila: Asian Development Bank.
  13. Wisner, B., P. Blaikie, T. Cannon, and I. Davis. (2004). "At Risk: Natural Hazards, People's Vulnerability and Disasters (2nd Ed.)." Rutledge, London, UK.
  14. BIRKMANN, J. (2006) Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies. Tokyo, United Nations University Press.
  15. BURTON, I.; Kates, R.W. and White, G.F. (1993) The Environment as Hazard, The Guildford Press, London, UK.
  16. COLLINS, A.E. (2009) Disaster and Development, Routledge, London, UK.
  17. CROUHY, Michel; Galai, Dan and Mark, Robert (2005) The Essentials of Risk Management. The McGraw Hill Co., New York, US.
  18. DAMON, P. C.(2006) International Disaster Management. Butterworth- Heinemann.
  19. DAMON, P. C. (2006) Introduction to International Disaster Management. Butterworth-Heinemann, UK.
  20. DILLEY, Max (2005) Natural Disaster Hotspots: A Global Risk Analysis. World Bank and University of Columbia, US.
  21. ELLIOT, J.E. (2006) An Introduction to Sustainable Development. Third Edition. Routledge, London UK.
  22. HEWITT, K. (1997) Regions of Risk: A Geographical Introduction to Disaster. Harlow, Longman, New York, US.
  23. Khan A.N. (2016) Introduction to Hazards and Disasters. Al-Azhar Environmental planning and management, Peshawar
  24. LEWIS, J. (1999) Development in Disaster-Prone Places, IT Press, London, UK.
- Rahman A. 2010. Disaster Risk Management: Flood Perspective. VDM Verlag Publishing Co. Ltd Germany, ISBN 978-3-639-29891-8, 192 Pages.

**Geog.407: Geography of Manufacturing Cr. Hours (03)**

**I- Introduction to Geography of Manufacturing:**

- i. Definitions and concepts, and organization.
- ii. Classification of industrial activities.

**II- Historical Development of Industrial Activity:**

- i. From industrial revolution to green paradigm.
- ii. Modern trends in manufacturing.

**III- Industrial Location:**

- i. Approaches to location dynamics.

- ii. Location factors.
- iii. Location models.
- iv. Location theories.

#### **IV- Geographical Analysis of Selected Industries:**

- i. Light industries (Cotton textiles, sugar industry)
- ii. Heavy industries (Iron and steel, petro-chemicals, cement)

#### **V- Modern Issues in Manufacturing:**

- i. Patterns of international production and the industrialization process.
- ii. De industrialization.
- iii. Industry and environmental problems.
- iv. Industrial planning and management.

#### **Recommended Books :**

1. Alexanderson, G. 1967. Geography of Manufacturing, Prentice Hall, Publications Englewood Cliffs.
2. Altaf, Z. 1988. Entrepreneurship in the Third World Risk and Uncertainty in Industry in Pakistan, Croom Helm, Ltd. London.
3. Aziz, S. 1969. Industrial Location Policy in Pakistan, 1st edition; National Publishing House Ltd. Karachi.
4. Chapman, K. & Walker, D.F. 1991. Industrial Location, 2<sup>nd</sup> edition; Wiley Eastern Ltd. Oxford.
5. Emery, J.S. & Shaw, J.H. 1968. Cities and Industries, Milton, 1st edition; Jacaranda Press.
6. Hayter, R. 1962. The Dynamics of Industrial Location, John Wiley & Sons New York.
7. Miller, E.W 1962. A Geography of Manufacturing, Prentice Hall Publications Englewood Cliffs.
8. Smith & Phillips 1961. Industrial and Commercial Geography, 4<sup>th</sup> edition; Constable & Company, Ltd. London.
9. Smith, D.M. 1981. Industrial Location, 2<sup>nd</sup> edition, John Wiley & Sons New York.
10. United Nations 1962. Industrial Districts – The Physical Planning of Industrial Estates, Department of Economic and Social Affairs New York.
11. United Nations 1966. Industrial Estates: Policies, Plans and Progress, Department of Economic and Social Affairs New York.
12. Watts, H.D. 1987. Industrial Geography, 1st edition, Longman Scientific and Technical London.

#### **Geog. 408: Hydro Geography Cr. Hours (03)**

- **Introduction:**
  - Definition and Scope
  - Development of Hydro Geography
- **Hydrological Cycle and Water Balance:**
  - Types of Water Resources
  - Hydrological Cycle, its components and human intervention
- **Precipitation and Rainfall:**
  - Forms of Precipitation
  - Evaporation and Transpiration
  - Space time Characteristics of Rainfall
  - Statistical Analysis and Cartographic Representation of Rain Fall Data
- **Runoff:**
  - Factor affecting the Runoff

- Runoff Cycle and Phases of Runof
- **Ground Water:**
  - Occurrence Origin and Discharge of Ground Water
  - Ground Water Reservoirs
  - Water Logging and Salinity
  - Human impacts on ground water and remedial measures
- **Floods:**
  - Causes and consequences of Floods
  - Flood Protection and Planning in urban areas
- **Glacial Water:**
  - The significance of glaciers in water cycle
  - The importance of glaciers for Pakistan
  - Response of Glacier to Global warming and Climatic Changes
- **Water Pollution:**
  - Classification of Water Pollutants
  - Extent and Distribution of Water Pollutants
  - Effects of Water Pollution
- **GIS and RS Application:**
  - RS-based Hydrological Data Acquisition
  - GIS-base Hydrological Mapping

#### **Books Recommended :**

1. Aronoff, S. 1995 Geographic Information Systems: A Management Perspective, Wdl Publications, Ottawa, forth edition Canada.
2. Chow, V. T. 1964 A Handbook of Applied Hydrology, McGraw Hill New York.
3. Water Resources Use and Management – Proceedings of a Symposium held at Canberra, Cambridge University Press London.
4. Drwry S.A. 1990 A Guide to Remote Sensing and Image Processing, Press Oxford.
5. Hill, E.S. (ed.) 1966 Arid Lands, Methuen London.
6. Hutchinson, G.E. 1960 A Treatise on Limnology, Chapman Hall Ltd. London.
7. John. R.J. 1996 Introduction to Digital Image Processing. Prentice Hall.
8. Meinzer, O.E. 1942 Hydrology, McGraw Hill New York.
9. Curran P. J. 1985 Principles of Remote Sensing. Longman Group Ltd.
10. Steel, E.W. 1966 Water Supply and Sewerage (4<sup>th</sup> ed.) McGraw Hill New York.
11. Strahler, A.N. 1963 The Earth Sciences, Harper & Row New York.
12. Lillesand T. M. & Kiefer R. W. 2004 Remote sensing and image interpretation. John Wiley & Sons Inc.
13. Todd, D.E. 1959 Ground water, John Wiley New York.
14. Tolm, C.F. Ground water, McGraw Hill New York.
15. Wisner, C.O. 1959 Hydrology, John Wiley New York.

**Geog. 409: Medical Geography Cr Hours (03)**

#### **I- Introduction to Medical Geography:**

- i. Definitions, themes, concepts, Nature & scope of Medical Geography
- ii. The Historical Development of Medical Geography
- iii. The status of Medical Geography.

#### **II- Factors inflecting the Patterns of Health & Disease:**

- i. Geographical Factors.

- ii. Physical Factors / Environmental Factors.
- iii. Cultural Factors.
- iv. Socio – Economic & Political Factors.

### **III- Patterns & Processes of Health & Disease:**

- i. Spatial variations in health & welfare patterns.
- ii. Role of Geography in exploring the impacts of diseases.
- iii. Models in Medical Geography
  - a. Epidemiological Transition
  - b. Health & inequalities
  - c. Inverse care law.
- iv. Global Patterns of health & Disease.
- v. Global Eradication of disease.

### **IV- Progress in Medical Geography:**

- i. Recent Issues & Developments in Medical Geography.
- ii. GIS, Remote Sensing & Health studies.
- iii. Changing Societies & future Health care.
- iv. Geography, Health care & Planning.

### **Recommended Books :**

1. Izhar, F. 2004. Geography & Health: A study in medical Geography, A.P.H. Publishing corporation New Delhi.
2. Leninan, J.& Fletcher, W.W. 1976. Health & the Environment, 1<sup>st</sup> edition, Blacker & Sons Ltd. Glasgow.
3. Lloyd, J. 2002 Health & welfare, Holder & Stoughton London.

### **Geog. 410: Pleistocene Geomorphology Cr. Hours (03)**

- I- Pleistocene period in general. Major characteristics of climate and landforms. Glacial, inter-glacial and stadial.
- II- Pleistocene of Pakistan. Major glacial and Periglacial zones. Climate and geomorphological processes and material produced.
- III- Landforms and their characteristics in relation of lithology.
- IV- Chronology of landform development. Problems of boulder conglomerate and loess. Correlation: Potwar and Himalayas etc.
- V- Pleistocene approach and advent of man and human culture, major areas of settlement and associated problems. Deforestation, erosion and bad land topography. National problem of land utilization.

### **Books Recommended :**

- Embleton C & King C.A.M. 1968. Glacial & Periglacial Geomorphology, Edward Arnold,. John Wiley, New York
- Flint R.F. 1957. Glacial & Pleistocene Geology, N.Y., John Wiley.
- Patterson 1962. Soan the Paleolith of Pakistan, GOP, Lahore

**I- Nature and objectives of Political Geography,**

- i. Definition and development of political geographic thought.

**II- A critical examination of the following:**

- i. Concept of environmental relationship in political geography.
- ii. The concept of geopolitics its development and short-comings (views of Karl Ritter. Freidrich Ratzel, Rudoll Kjellen, Vidal de la Blache, jean Brunches, Alfred Thayer Mahan, Sir Hal ford Mac kinder, Karl House offer, Nicholas J. Spykman and Alexander-de-Surversky).
- iii. National deterministic theories of Germans and French possibilities.

**III- State as a Politico-geographic Phenomenon:**

- i. Concept of the state and its classification. Chief political-geographic characteristics of states.
- ii. Hierarchy of political area.
- iii. Frontiers and boundaries: their concepts, functions and classification.
- iv. Core areas, ecumenical area and capitals.

**IV- Approaches and forces in the politico geographic study of state:**

- i. A critical examination of the following approaches:
  - a. Simple descriptive approach.
  - b. Historical approach.
  - c. Morphological approach.
  - d. Functional approach.
- ii. Forces affecting the internal functioning of a state:
  - a. Centrifugal forces.
  - b. Integrating factors.
- iii. Factors affecting the external relations of a state:
  - a. Territorial considerations.
  - b. Economics factors.
  - c. Political relations.
  - d. Strategic consideration.
  - e. Ideological and cultural factors.

**V- A study of the foreign relations of the following states in relation to the above factors:**

- i. U.S.A.
- ii. U.K
- iii. Russia
- iv. China

**VI- A detailed politico geographical study of Pakistan****VII- World Organization:**

- i. United Nations.
- ii. Analysis of the World Political Patters in terms of their economic, strategic, ideological and cultural relationships with special consideration of British Commonwealth, European Common

Market, North Atlantic Treaty organization, South East Asia Treaty Organization Central Treaty Organization and the Arab League.

**Books Recommended :**

1. Alexander D. M. 1963 World Political Patterns, Rand McMally, Chicago.
2. Blij, H.J. 1967 Systematic Political Geography, John Wiley New York.
3. Bowman, I. 1928 The New World Problems in Political Geography, Ginn New York.
4. C. L. 1958 Geography and World Politics, Prentice Hall New Jersey.
5. Cohen, Saul B. 1975 Geography and Politics in World Divided, Random House New York.
6. G. Y.M. 1956 Political Geography and the World Map, Fredrick A. Praeger New York.
7. M. A.E. 1949 Geography Behind Politics, Huntington's University Library London.
8. Saul Rose 1963 Politics in Southern Asia, Macmillan London.
9. W. H.W. 1957 Principles of Political Geography, Appleton.

**Geog. 412                      Regional Planning & Development                      Cr. Hours (03)**

**I. Principles and Scope of Planning and Development**

- i. Planning: A Geographer's View
- ii. Planning Processes
- iii. Planning as an Activity
- iv. Objectives in Planning
- v. Objectives of Regional Development Efforts

**II. Implications of Regional Development**

- i. Defining Regions
- ii. Regional Hierarchy and Classification
- iii. Regionalism or Administrative Boundaries?
- iv. Determining Regional Boundaries
- v. Factors contributing to Uniformities and Disparities in Regions
- vi. Types of Development Regions
- vii. The Problem of Regional Growth.
- viii. Locational Theory and Regional Growth
- ix. Criteria for the Choice of Regional Projects

**III. Resources and Planning**

- i. The Resource Base
- ii. Resource Evaluation
- iii. Utilization of Resources for Planning and Development

**IV. Urban and Regional Planning**

- i. Urban Growth Patterns
- ii. Impact of Industrialization
- iii. Phenomenon of Urban Spread
- iv. Planning for Cities and City Regions

**V. Rural Planning**



- i. Agricultural Planning and Rural Development
- ii. The Human Factor in Agricultural Development
- iii. Agrovilles and New Rural Settlements

**VI. Examples of Urban/Rural/Regional Planning with Special Reference to Pakistan:**

- i. Las-Bela Mekran Region
- ii. Kulu Region.
- iii. Multan-Bahawalpur Region
- iv. Sargodha Region.
- v. Barani Region.

**VII. Students shall be required to chose a region and develop conceptual hierarchy and planning models for the region. The report shall accompany all regional data with a master regional plan.**

**Books Recommended:**

1. Birmingham, W., & Ford, A.G. (editors), 1966: Planning and Growth in Rich and Poor Countries, George Allen and Unwin Ltd., London.
2. Cox, K. R. 1979 Location and Public Problems, Basil Black-Well, Oxford.
3. Frey H. 1999 Designing the city towards a more sustainable Urban Form, Routledge London.
4. Goodall, B. & Kirby, A, (editors), 1979, Resources and Planning Pergamon Press, Ltd., Oxford.
5. Hall P. 1989 Urban and Regional Planning, 2<sup>nd</sup> edition Allen & Unwin London.
6. Hancock J. 1978 Urban Development & Planning, Basil Blackwell Publisher London.
7. Hudson R. & Lewis J.R. 1982 Regional Planning in Europe, Pion Ltd. London.
8. Keeble, L. 1969 Principles & Practice of Town & country Planning, The Estate Gazette Ltd. London.
9. Mc Loughlin, B.J. 1969 Urban and Regional Planning: A System Approach, Faber and Faber, London.
10. Weitz, R. 1965 (general editor) Rural Planning in Developing Countries, Routledge and Kegan Paul, London.

**Geog 413. Rural Settlement Geography Cr. Hours (03)**

- I. Introduction: Geographical Approaches to Settlement Geography.
- II. Geographic Bases of rural settlements.
- III. Cultural bases of rural settlements.
- IV. Spatial Patterns and classification of rural settlements.
- V. Location of settlements-Central and new Central place.
- VI. Architecture and Housing.
- VII. Rural Land Use Patterns.
- VIII. Population and Social Organization.
- IX. Pioneer Settlement, Planning and pre-development.

**Books Recommended:**

1. Kariel, H.G. & Kariel, P.E. 1972 Explorations in Social Geography, Addison, Wesley.
2. Trewartha, G.T. 1967 Physical Elements of Geography, 5<sup>th</sup> ed. McGraw Hill New York.

3. Blaut, Jame M. 1969 Rural Landscapes of the New Western, Prentice Hall New York.
4. Rapport, Ano 1969 Hourse Form and Culture, Englewood Cliff, Prentice-Hall New Jersey.
5. Spencer,J.E.T. W.L. 1969 Cultural Geography, John Wiley New York.
6. Chisholm, M. 1967 Rural Settlement and Land Use, John Wiley New York.
7. Christaller, W. 1966 Central Places in Southern Germany, Prentice-Hall New Jersey.
8. Taylor, R. & Jones, A.B. 1964 Rural Life and Urbanized Society, Oxford University Press New York.
9. Takes, H.P. 1958 Physical Planning in connection with land reclamation and improvement, International.
10. Sauer, C. O. 1952 Agricultural Origin & Dispersals, American Geographical Society New York.
11. Blache De la 1926 Principles of Human Geography, English Ed.
12. McGaugh, Maurice (1977) A Geography of Population and Settlement, Brown.
13. Hart, J. F. Rural Landscapes of the Western World, Prentice Hall New York.
14. Malik R.A. & Ven-deshill, B.G. Readings in Rural Settlement Geography, Manuscript prepared by the authors for publication.

**Geog 414. Tourism Geography Cr. Hours (03)**

**I. Introduction to Tourism Geography**

- i. Definitions, themes, concepts, nature and scope of tourism geography
- ii. The Historical Development of the Geography of Tourism and Recreation
- iii. The status of Tourism Geography

**II. Modern Tourism and Recreation:**

- i. The demand for Tourism and Recreation
- ii. The supply for Tourism and Recreation
- iii. The impact of Tourism and Recreation
  - a. Socio-Economic Impacts
  - b. Physical-Environmental Impacts

**III.Resources and Tourism**

- i. Trends and themes in the use of tourism resources
- ii. Nature as recreational resource
  - a. Urban tourism
  - b. Rural tourism
  - c. Costal and resort tourism

**IV.The Tourism Geography of World**

- i. Patterns and processes of world tourism
- ii. Factors influencing tourism
- iii. Tourism & recreation in Pakistan

**V.Tourism and Recreation Planning and Policy**

- i. Planning and management of tourism and recreation
- ii. Principles processes and planning models

- iii. Approaches to tourism planning
- iv. Assessment and monitoring
- v. Tourism policy initiatives and decision-making
- vi. Sustainable development and tourism geography

#### **Recommended Books :**

1. Brunt, P. & Page, S.J. (2001) *Tourism an Modern Synthesis*, London, 1st edition; Thomson learning.
2. Jafari, J. (2000) *Encyclopedia of Tourism*, London, 1st edition, Routledge.
3. Hall, C.M. & Page, S.J. (1999) *The Geography of Tourism and Recreation*, London, 1st edition, Routledge.
4. Hudman, L. & Jackson, R. (1998) *Geography of Travel and Tourism*, London, 3<sup>rd</sup> edition Delmar Publishers.
5. Williams, S. (1998) *Tourism Geography*, London, 1st edition Routledge.
6. Davidson, R. & Maitland, R. (1997) *Tourism Destinations*, London, 1st edition, Hodder and Stoughton.
7. Wahab, S. & Pigram, J.J. (1997) *Tourism, Development and Growth*, London, 1st edition, Routledge.
8. Herbert, D. (1995) *Heritage, Tourism and Society*, London, 1st edition, Mansell Publishing Ltd.
9. Sidhu, S.S. (1995) *New Horizons in travel and Tourism*, 1st edition; Har-Anand Publications New Delhi.
10. Vellas, F. & Bechercl, L. (1995) *International Tourism*, London, 1st edition, Macmillan Business
11. Williams, A.M & Shaw, G. (1994) *Critical Issues in Tourism*, Cornwall, 1st edition, Black Well Publishers.

### **Geog 415.                      Transportation Geography                      Cr. Hours (03)**

#### **I. Basic concepts of Transportation Geography**

- i. Definition, Growth and Scope of Transportation Geography
- ii. Theory of Transportation

#### **II. Spatial Variations in Transportation Costs**

- i. Location of Transportation Routes and Networks
- ii. The Structure of Transportation Costs
- iii. Transportation Costs and the Location of Economic Activity
- iv. Transportation Improvements and their Spatial Impact

#### **III. Transportation Network Analysis (Study & application of the following)**

- i. Aggregate Measures
  - a. Graph Theoretic Concepts: Non-Ratio Measures, (cyclomatic Number, Diameter), Ratio Measures (Alpha, Beta, Gamma, Eta, Pi, Theta, Jota)
  - b. Measures of Individual Elements of Transportation Net-work: Associated Number, connectivity Dispersion, Accessibility, and circuitry
  - c. Measures of Nodal Accessibility
    - i. Nodal Accessibility
    - ii. The Shortest Path Matrix
    - iii. Network as Valued Graph
    - iv. Graph Theory Interpretation of Hierarchies

**IV. Linkage Importance in a Regional Highway Network****V. Design and Performance of Network**

- i. Costs and Benefits in Path Design
- ii. Traveling Salesman Problem
- iii. Other Minimum Distance Networks
- iv. The Best Path in a Network

**VI. The Best Path on Irregular Surfaces****VII. Other Irregular Surfaces and Isochrones****VIII. Flow Analysis**

- i. Concepts and Methods in Flow Analysis
- ii. Gravity Model
  - a. Basic Gravity Model
  - b. Gravity Model and Traffic
  - c. Gravity Model and Hinterland Analysis
  - d. Gravity Model and Potential Maps
  - e. Jilman's Triade
  - f. Weakness of the Gravity Model

**IX. Model Systems**

- i. Characteristics and Comparison of the following Model System
  - a. Rail Road
  - b. Motor Transport
  - c. Water Ways
  - d. Air Transport
  - e. Pipe Lines

**X. Transportation Planning in Developing Countries**

- i. The Need for Comprehensive Planning & Analysis
  - a. System Approach.
  - b. Comprehensive Planning
  - c. Pricing Policies
- ii. Transport-Alternatives Evaluation Model
  - a. Regional Consumption, Incomes, Prices
  - b. Aggregate Demand, Production and Growth
  - c. Input-Output Relationship
  - d. Investment and Capacity
  - e. Transportation Sector

**Books Recommended:**

1. Edward J. Taafee, (1996). Geography of Transportation, New Jersey, Prentice Hall.
2. Michael E. Eliot H. (ed.) (1974) Transportation Geography, New York, McGraw Hill.
3. Ronald, (1971) Gould, Spatial Organization, New Jersey, Prentice Hall.

4. Cole & King, (1968) Quantitative Geography, London, John Wiley & Sons.
5. Haggett, P. A.D. (1965) Locational Analysis in Human Geography, London, Edward Arnold.
6. Haggett P. & J. Chorley, Network Analysis in Geography, London, Edward Arnold.
7. Kansky, K.J., Structure of Transportation Networks.
8. Peter E. Lloyd P. D. Location in Space.

**GEOG: 417                                      URBAN ECOLOGY                                      Cr. Hours (03)**

- Study of urban environment,
- urban pollution and management,
- solid waste management,
- air pollution and its effects on health,
- heat islands, Green areas deterioration,
- Culture and Ecological indicators,
- Green verses Grey areas,
- Dynamic segmentation of Land cover and Land use,
- Environmental Justice,
- Distribution of Pollutants and Civic amenities

### **Lab**

Study of selected urban areas with special reference to environmental problems.

### **Suggested Readings**

- 1- Herbert, T. D. and Thomas, J. C. 2005. Cities in space: City as Place, 3rd Edition, David Fulton Publishers: London.
- 2- Lackey, R.T. 2005. Economic growth and salmon recovery: an irreconcilable conflict? Fisheries 30(3): 30- 32.
- 3- Gleick, P. 2000. The changing water paradigm: A look at twenty-first century water resources development' Water International 25(1), 127 – 138.
- 4- Guha, R. 2000. Environmentalism: A global history, Longman: New York
- 5- Ludwig, D. Hilborn, R. and Walters, C, 1993 Uncertainty, resource exploitation, and conservation: lessons from history Science 260: 36.
- 6- Davies, K. W. and Herbert, D.T. 1993. Communities with in Cities: An Urban Social Geography, Bellhaven Press: New York.
- 7- Herbert, D. and Thomas, J. C. 1982. Urban Geography, John Wiley: New York.
- 8- Herbert, T. D and Thomas, J. C. 1982. Urban Geography, John Wiley: New York.
- 9- Freedman, B. 1998. Environmental Science: A Canadian perspective, Scarborough, Prentice Hall: Canada.

### **Geog: 420-432. List of Optional papers to be offered in Regional Geography.**

- Geog. 420    Africa: South of Sahara
- Geog. 421    Australia
- Geog. 422    Central Asia
- Geog. 423    Eastern Asia China, Japan & Korea
- Geog. 424    Europe
- Geog. 425    Geography of the Muslim World
- Geog. 426    North African Countries
- Geog. 427    North America
- Geog. 428    Russia
- Geog. 429    S. West Asia

- Geog. 430 South America
- Geog. 431 South Asia
- Geog. 432 South East Asia

**Geog 433. Principles of Computer Mapping (Theory) Cr. Hours (03)**

**I. Theory of Computer mapping**

- i. Introduction
- ii. The Development of Computer Assisted Cartography
- iii. The Maps as Data Model
- iv. Maps and Data Processing Systems

**II. Geographic and Cartographic Database Concepts**

- i. Spatial Resolution and Scale
- ii. Geographic and Cartographic Databases
- iii. Handling Digital Databases
- iv. Digital Data Formats

**III. Data Acquisition**

- i. Data Input Systems
- ii. Data Acquisition
- iii. Data Processing

**IV. Statistical Mapping**

- i. Statistical Surveys
- ii. Data Analysis
- iii. Data Classification
- iv. Mapping Methods

**V. Map Design and advanced Mapping Environment**

- i. Symbolization
- ii. Graphic variables
- iii. Lettering
- iv. Electronic Atlases

**VI. Production of Maps / Diagrams**

- i. Thematic
- ii. Topographic relief
- iii. Climatic
- iv. Economics
- v. Population
- vi. Settlements
- vii. Block Diagrams
- viii. Cartograms

## ix. Economic Data Graphs

**Geog. 434. Computer Mapping (Practical) Cr. Hours (03)****I. Visualization of Spatial Data****II. Statistical Mapping****III. Conversion of Projections****IV. Design and production of following Maps & Diagrams**

- i. Thematic
- ii. Topographic relief
- iii. Climatic
- iv. Economics
- v. Population
- vi. Settlements
- vii. Block Diagrams
  - a. Cartograms
  - b. Economic Data Graphs

**Books Recommended:**

1. Demers, M.N. (2000) Fundamentals of Geographic Information Systems, New York, John Wiley & Sons.
2. Kraak, M.J. & Ormelling, F.J. (1996) Cartography: Visualization of Spatial Data, Longman, Harlow.
3. Peterson, M.P. (1995) Interactive and Animated Cartography, Prentice Hall, New Jersey
4. Robinson, A. N. (1994) Elements of Cartography, New York, John Wiley.
5. Cromley, R.G. (1992) Digital Cartography, New Jersey, Prentice Hall.
6. Johnson et al. 1992 Geographic Information system and Mapping, American Society for Testing and Materials.
7. Mather, P.M. 1991 Computer applications in Geography, John Wiley & Sons, New York.
8. Taylor, D.R.F. 1991 Geographic Information Systems: The Micro Computer and Modern Cartography, Pergamon Press, Oxford.
9. Keats, J.S. 1973 Cartographic Design and Production Longman, London.
10. Monkhouse F.J. & Wilkinson, H.R. 1973 Maps and Diagrams, London, Methuen.
11. Lawrence, G.R.P. 1971 Cartographic Methods, Methuen & Co., London.
12. Garnet, A. 1935 Geographical Interpretation of Topographical Maps, London.

**Course outlines for General Courses****GC. 111 Archaeology****GC – 111 Archaeology Cr. Hrs. 03****BS Geography 4 Years Programme, University of the Punjab, Lahore****THEORY**

Definition and terminology of Archaeology

Aims and objectives of Archaeology

Brief history and development of Archaeology

Types of Archaeology.

### **PRACTICAL**

Visit to local sites and museums

Systematic surface collection

Photographic documentation of archaeological sites

Identification and drawing of artefacts

### **Part - B**

### **THEORY**

Relation of Archaeology with History, Anthropology, Geography,

Geology, Zoology, Botany, Physics and Chemistry

Basic Concept of Archaeology: artefacts, stratigraphy,

archaeological sites, settlement-pattern, context

Survey in Archaeology

Excavation techniques

Chronology.

### **PRACTICAL**

Study of regional maps

Location of sites/monuments on the maps

Identification of key features of different periods

### **RECOMMENDED READINGS:**

1. Agrawal, D. P. Ghosh, A. (eds.), Radiocarbon and Indian Archaeology, Bombay, 1973.
2. Aitkin, M. J. Science-based Dating in Archaeology, Longman, London, 1990.
3. Bowman, S. G. E. Radiocarbon Dating, the British Museum publication, London, 1990.
4. Fagan, B.M. In the Beginning: An Introduction to Archaeology, Harper Collins, 7th ed., 1991.
5. Hole, F. and Heizer, R.F. Prehistoric Archaeology: A Brief Introduction, New York, 1977.
6. Joukowsky, M. A. Complete Manual of Field Archaeology, USA, 1980.
7. Renfrew, C. and Bahn, P. Archaeology: Theories, Methods and Practice, Thames and Hudson, London, 1991.
8. Wheeler, R. E. M. Archaeology from the Earth, London, 1961.

### **GC. 112 Computer Science**

#### **GC - 112 Computer Science 3(2+1)**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

### **COURSE DESCRIPTION:**

This course is designed for students with little or no computer experience. This course introduces computer concepts, hardware components, basic computer operations and use of software applications to solve problems. Students will have complete understanding and use of personal computers and application software such as Microsoft Word, Excel and PowerPoint.

### **AIMS AND OBJECTIVES:**

Students successfully completing this course should be able to:

- Develop a vocabulary of key terms related to the computer and to software programs.



- Identify the components of a personal computer system.
- Demonstrate mouse and keyboard functions.
- Demonstrate window and menu commands and how they are used.
- Demonstrate how to organize files and documents on a USB/hard drive.
- Compose, format and edit a word document.
- Send email messages and navigate and search through the internet.

### **COURSE CONTENTS:**

Data and Information, Information Processing Cycle, Components of a Computer, Advantages and Disadvantages of Using Computers, Categories of Computers, Computer Applications in Society. Keyboard and Pointing Devices, Types of Input, Input for Smart Phones, Game Controllers, Digital Cameras, Voice Input, Video Input, Scanners and Reading Devices, Biometric Input, Terminals. Display Devices, LCD Monitors and LCD Screens, Plasma Monitors, CRT Monitors, Printers, Nonimpact Printers, Impact Printers, Speakers, Headphones, Data Projectors. Interactive Whiteboards, Storage, Hard disks, Flash Memory Storage, Solid State Drives, Memory Cards, USB Flash Drives, Cloud Storage, Optical Discs, Blue-Ray Discs, Magnetic Tapes, Magnetic Stripe Cards and Smart Cards, Microfilm and Microfiche, Enterprise Storage. Motherboard, Processor, Control Unit, Arithmetic Logic Unit, Machine Cycle. Data Representation, Memory Sizes, Types of Memory, RAM, Cache, ROM, Flash Memory. System Software, Operating Systems, Utility Programs. Application Software, Business Software, Graphics and Multimedia Software, Software for Home, Personal, and Educational Use, Web Applications. Application Software for Communications. Internet, World Wide Web, Networks, Intranets. Enterprise Computing, Computer Security Risks, Viruses. Introduction to MS Word, MS Excel, MS PowerPoint.

### **RECOMMENDED BOOKS**

1. Shelly, G. B., & Vermaat, M. E. (2012). Discovering computers fundamentals: your interactive guide to the digital world (Latest ed.). Cengage Learning.
2. Sawyer, S. C., & Williams, B. (2000). Introduction to Using Information Technology (Latest ed.). McGraw-Hill Higher Education.17
3. Brookshear, G. G., & Brookshear, J. G. (2002). Computer science: an overview (Latest
4. O'Leary, T. (2010). Computing Essentials (Introductory ed.). Career Education.
5. Sinha, P.K.(2007). Computer Fundamentals (6th ed.). BPB publication.

### **GC. 113 Economics**

#### **GC-113 Economics Cr. Hrs. 03**

#### **BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

#### **Introduction**

Nature, scope and importance of Economics, Microeconomics vs Macroeconomics, Scarcity and choice, Opportunity cost, Factors of production, Production possibility frontier.

#### **Demand, Supply and Equilibrium**

Concepts of demand and supply, Laws of demand and supply, Market equilibrium, Shifts in demand and supply curves, and market equilibrium.

#### **Elasticity**

Concept of elasticity, Price elasticity of demand, Income elasticity of demand, Cross Elasticity of Demand, Price elasticity of supply, Application of elasticity.

### **Utility Theory**

Consumer behavior, Preferences, Utility function, Laws of Increasing and diminishing marginal utility, Law of Equi-marginal utility.

### **Theory of Firm**

Factors of production and their rewards, Total, average, and marginal products, Laws of returns, Cost of production, Total, average, and marginal costs, Total, average, and marginal revenue. Concept of profit maximization/Cost minimization.

### **Market Structure**

Perfect competition & imperfect competition: assumptions and Price/Output determination.

### **National Income**

Concepts of national income, GDP & GNP, Real vs. nominal GNP, NNP, NI, PDY, Saving and Personal Consumption.

### **Macroeconomic Issues**

Concept of inflation, unemployment, Balance of payment, Exchange rate and Business cycles. Monetary Policy and Fiscal Policy and their role in the economy.

### **Recommended Books:**

1. Michel Parkin. 2004. Economics, 5th Ed., Addison Wesley.
2. Paul A. Samuelson and W.D. Nordhaus. 2004. Economics, 18th Ed., McGraw Hills, Inc.
3. John Sloman, Economics (Latest edition).
4. Miller. Microeconomic Theory (Latest edition).
5. Lipsey and Crystal. Economics (Latest edition).

### **GC. 114 Geology**

#### **GC - 114 Geology Cr. Hrs. 3(2+1)**

#### **BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

#### **Objectives and Learning Outcomes:**

This course is designed to impart basic knowledge of geology. This will help the students to understand various types of rocks and minerals and to learn about sedimentary and structural features and the processes operative within and on the surface of the earth.

#### **Course Contents:**

Introduction and scope of geology; importance and relationship with other sciences; history and philosophy of geology; Earth as a member of the solar system; its origin, age, composition and internal structure; introduction to plate tectonics, Isostasy; mountain building processes; earthquakes and volcanoes; weathering and erosion; introduction, identification and classification of rocks; sedimentary, igneous and metamorphic structures; physical properties of mineral; introduction to fossils in sedimentary rocks; introduction to folds, faults, joints, cleavage, foliation, lineation; Geological Time Scale; Concept and techniques of geological dating, relative and absolute dating;; Use of Brunton Compass and GPS, etc.

**Labs:**

Concept of scale and maps, topographic maps, geological time scale and evolution of life, major geological events, sense of relief and physiographic features with the help of models and topographic maps, contouring. Simple geological maps and drawing of cross-sections. Use of field instruments viz, Brunton compass/clinometer, Identification of basic rock types and minerals.

**Recommended Books:**

1. Physical Geology (15 th Edition) by Charles Plummer, Diane Carlson, Lisa Hammersley, 2015, McGraw-Hill
2. Laboratory Manual in Physical Geology (9th Edition), Richard M. Busch, 2011, American Geological Institute, Pearson Education
3. Physical Geology, By Plummer, (14th Edition), Charles (Carlos) Plummer, Diane Carlson, Lisa Hammersley, 2012 McGraw-Hill
4. Principles of Physical Geology by Holmes, A., 1978, Nelson.
5. Foundation of Structural Geology by Park, R. G., 1983, Blackie.
6. Elementary Exercises upon Geological Maps by Platt, J. I., 1961, Thomas Murby and Co.
7. An Introduction of Geological Structures and Maps by Bennison, G.M., 22 1997, Edward Arnold.
8. Physical Geology by Plummer, McGeay and Carlson, 2005.
9. Lab Manual for Physical Geology by Jones, Norris. W., Johns and Charles E., 2005, McGraw-Hill.
10. How Does Earth Work: Physical Geology and Process of Science by Smith, G. and Pun, A., 2006, Prentice Hall.
11. The Mapping of Geological Structures by McClay, K.R., 1987, Open University Press.

**GC. 115 History****GC- 115 History Cr. Hrs. 3****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Course Description:**

The purpose of the course is to discuss political, constitutional, economic, and religious struggle of the Muslims of South Asia under the British Raj. After one thousand years' Muslim rule, India came under the British. Therefore, a triangular struggle ensued after 1857 which culminated in the freedom of India. This course deals with the growth of Muslim consciousness till 1930 when Hindu-Muslim tangle sharpened to such an extent that the Muslims demanded a separate homeland of Pakistan.

**Aims & Objectives:**

After completing this course, students will be able to understand:

1. origin and outcome of the Muslim struggle for Pakistan
2. the role of Muslim leaders such as Sir Syed Ahmad Khan, Allama Iqbal and Quaid-i-Azam.
3. the Two-Nation Theory which is essential to create a sense of Pakistani Nationalism.

**1. Contents:**

- War of independence 1857
- Aligarh Movement.
- Partition of Bengal.

- Shimla Deputation.
- All India Muslim League.
- Lucknow Pact 1916
- Khilafat movement
- Simon Report.
- Nehru Report.
- Jinnah's Fourteen Points.
- Allahabad Address.
- India Act 1935
- Lahore Resolution 1940
- Indian Election 1946
- 3<sup>rd</sup> June plan and emergence of Pakistan

## 2. Basic Readings:

Qureshi, I.H. Struggle for Pakistan. Karachi, 1965.

## 3. Additional Readings:

1. Abdul Hamid. Muslim Separatism in India 1858-1947, Oxford University Press, 1967.
2. Ahmad, Jamil ud Din. Early Phase of Struggle for Pakistan. Middle Phase of Struggle for Pakistan. 3 Vols.
3. Allama G. Documents of Pakistan Movement. Karachi, 1967.
4. Aziz, K. K. Making of Pakistan. -----.
5. A History of the Idea of Pakistan. 4 Vols. BS (4 Years) for Affiliated Colleges Center for Undergraduate Studies, University of the Punjab 3 -----.
6. Life and Works of Ameer Ali. Lahore, 1968.
7. Chaudhari Muhammad Ali. Emergence of Pakistan.
8. Dar, B.A. Religious Thoughts of Sayyid Ahmed Khan, Lahore, 1957.
9. Keith, A.B. Constitutional History of India. Oxford, 1937.
10. Pakistan Historical Society. History of Freedom Movement. 3 Vols.
11. Pirzada, Sharifuddin. Evolution of Pakistan. 1942, 1940, 1939.
12. Philipps, CH. Select Document on the Evolution of India, and Pakistan.
13. Qalb-i-Abid, Syed. Muslim Politics in Punjab 1921-1947. -----
14. Jinnah: Second World War and the Pakistan Movement. -----
15. Muslim Struggle for Independence from Sir Syed Ahmad Khan to Quaid-e-Azam Muhammad Ali Jinnah. (1857-1947)
16. Shan Muhammad. Sir Syed Ahmed Khan, A Political Biography. Lahore, 1976.
17. Sharif-al-Mujahid. Quaid-i-Azam Mohammad Ali Jinnah. Karachi.
18. Waheed uz Zaman. Towards Pakistan.

**GC. 116 Introduction to Environmental Science****GC-116 INTRODUCTION TO ENVIRONMENTAL SCIENCE 3 (3-0)****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Introduction**

Environmental Science is an inter and multi-disciplinary field of knowledge developed as a decision support science with convergence of a wide range of disciplines of natural, social, computational and management and sciences with philosophy and humanities. Therefore, its scope is as wide as the ambit of environment itself, which justifies its importance for students of Geography.

**Teaching Objectives**

The overarching aim of this course is to value addition in the scheme of studies of BS Geography programme. Whereas specific objectives are to:

1. introduce students with basic concepts of environmental science and how it developed as an academic discipline important to understand environmental in issues in geographical context;
2. enable students to appreciate the importance environment as life support system on earth and providing sustenance to human life; and
3. familiarize students with current challenges of sustainable development at local and global level.

**Learning Outcome**

- a) Learners become aware of importance of environment, their interactions with environment and impacts of human activities on environment.
- b) Learners acquired skills to reduce Students them with the development of Env. Sci history.
- c) To aware them with basic environmental issues.

**Course Outline**

**A) Introduction to environment**, its types and scope; major components of environment: Natural (Ecological), Socio-economic and technological components; their relationships with various environmental factors.

**B) Evolution of Environmental Science** and Role of Geography in Environmental Studies.

**C) Ecosystem:** structure, functions and types of eco-system, ecosystem services

**D) Material Cycles in natural environment:** (Hydrological cycle, Carbon cycle, Nitrogen cycle, and Lithospheric cycles).

**E) Main school of thought in Environmental Geography** (cognitive behaviorisms; physical determinism; Possibilism; Stop-and-go determinism).

**F) The concept of environmental resources.** Definition of resources in geography; Types of environmental resources. Human impacts on natural resources.

**G) Major environmental challenges for sustainable development:**

- **Anthropogenic driven environmental challenges**
  - 1) Deforestation
  - 2) Water pollution and it causes
  - 3) Air pollution and its causes
- **Quasi-natural / technology driven environmental challenges**

- 1) Global warming
- 2) Climate change

**Recommended Books:**

1. Environmental Science: Earth as a Living Planet, Botkin, D.B & Keller, E.A. 6<sup>th</sup> Ed. John Wiley & Sons, 2007.
2. Environmental Science: systems and solutions, McKinney, M.L., Schoch, R.M. & Yonavjak, L. 4<sup>th</sup> Ed. Jones & Bartlett Publishers, 2007
3. Environmental Science: Toward a Sustainable Future, Wright, R.T. & Nebel, B.J. 10<sup>th</sup> Ed. Pearson Educational, 2007.
4. Environmental Science: working with the Earth. Miller, G., Thomson Learning, 2002.

**GC. 117 Mass Communication**

**GC – 117 MASS COMMUNICATION Cr. 3**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**OBJECTIVES:**

This course is aimed at introducing the students with basic concept of communication and mass communication. This course further enables the students to understand the communication process and distinguish among various mass media

**CONTENTS**

Definitions, types and significance. Process of Communication: source; message; channel; noise; destination; encoding; decoding; and

**COMMUNICATION**

feedback. Barriers in communication. Essentials of effective communication. Dimensions of mass communication: mass media, advertising, public relations, blogging, new media etc. and Functions of mass communication. (Information, Education, Opinion Formation, Entertainment and Development.)

**MEDIA OF MASS COMMUNICATION**

Print Media: newspapers, magazines, periodicals, books, pamphlets, etc. Broadcast media: Radio, TV, film. New Media: (Internet)–On-line journalism. Traditional/Folk-Media. Comparative study of mass media, their components, functions and effects.

**Recommended Books:**

1. Dominick, J.R.(2006).Dynamics of Mass Communication(8 th ed.)New York. McGraw-Hill
4. Merrill, J.C., Lee, J., Friedlander, E.J., (1994). Modern Mass (2 nd ed). New York. Harper Collins College Publishers
5. Straubhaar, LaRose. (2002). Media Now: Communication Media Information Age (3 rded.). USA. Wadsworth

**GC. 118 Political Science****GC- 118 INTRODUCTION TO POLITICAL SCIENCE 03 Cr. Hrs.****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Objectives:**

The aim of this course is to introduce the students with the fundamentals of the subject of Political Science and prepare them for advanced studies in BS Geography. The basic concepts and terminology commonly used in the domains of Political and Human Geography will be addressed in this course. The understandings will make the students friendly with the subject.

**Contents:**

1. Definition, Nature, Scope and Sub-fields of Political Science.
6. Relationship of Political Science with other social sciences.
7. Approaches to the study of Political Science: Traditional and behavioral approach.
8. State: its origin and evolution; Western and Islamic concepts of State,
1. 5.Nation and Sovereignty.
2. 6.Basic concepts of Political Science: Power, Authority, Legitimacy
3. 7.Organs of Government: Legislature, Executive, Judiciary.

**Recommended Books:**

- 1.Ahmad,Sheikh Bashir,Riyasat Jo Ilm (Sindhi meaning Science of State), Jamshoro, Institute of Sindhology, University of Sindh,1985.
2. Haq, Mazher ul, Theory and Practice in Political Science, Lahore Bookland, 1996.
3. Ian Mackenzi (Ed.), Political Concepts: A Reader and Guide, Edinburgh, University Press, 2005.
- 4.Mohammad Sarwar,Introduction to Political Science, Lahore Ilmi Kutub Khana, 1996.
5. R. C. Agarwal,Political Theory (Principles of Pol. Science), New Delhi,S. Chand & Co., 2006.
- 6.Robert Jackson and Dorreen Jackson, A Comparative Introduction to Political Science, New Jersey, Prentice-Hall,1997
7. Rodee Anderson etc. Introduction to Political Science, Islamabad, National Book Foundation, Latest Edition.
8. Roskin, Michael G., Political Science: An Introduction, London: Prentice Hall, 1997.
- 9.Shafi,Choudhry Ahmad, Usul-e-Siyasiat (Urdu), Lahore Standard Book Depot, 1996.
10. V. D. Mahajan,Political Theory- Principles of Pol. Science, New Delhi, S. Chand & Co., 2006.

**GC. 119 Social Psychology****GC-119 Social Psychology Cr 3****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Course Description:**

This is aimed to gain insight into social behavior and how social psychological theories can be used to understand behavior and judgments in everyday life, Social Psychology is the scientific study of how individuals think, behave, and are influenced by others. Current theories in the field will be applied to real-

life situations to make sense of human behavior. Topics covered include behavior and attitudes, social beliefs, cultural influences, conformity and obedience, self-knowledge and self-esteem, persuasion, group influence, aggression, altruism, prejudice and discrimination, stress and health, legal testimonies and law, and interpersonal relationships. In-class experiments, group discussions and hands-on activities are important learning tools will be used in this course.

### **Learning Outcomes:**

Upon successful completion of the course students will have developed knowledge and understanding of Social thinking, Social influence, Social relations, and Basic research skills:

1. Understand and explain concepts, theories, and research relating to the study of social psychology.
2. Demonstrate the application of social psychology to individuals, groups, and psychological factors that lead to prejudice, discrimination, aggression, and stereotyping.
3. Recognize aspects of social psychology, including the fundamental attribution error, biases, social roles, and social norms, in your daily life.
4. Describe how attitudes can be changed through cognitive dissonance and persuasion.
5. Explain group dynamics, how conformity, obedience, groupthink, social facilitation, social loafing, and altruism relate to group behavior.

### **Course Contents**

#### **1. The Field of Social Psychology**

- a. Introduction to social psychology
- b. Current trends and future scope
- c. Conducting research in social psychology

#### **2. Self- Presentation and Social Perception**

- a. Nonverbal behavior
- b. Attribution
- c. Impression management

#### **3. Social Cognition**

- a. Perceiving other : (NS Model)
- b. Casual attribution Biases
- c. Schemas and stereo types.

(Factors contribute to stereotyping and prejudice? consequences of stereotyping, prejudice, and discrimination, eradicating prejudices)

- d. Heuristics in social perception.

(In group, out group, self-fulfilling prophecy, changing streotypes, eradicating conflicts)

#### **4. Attitudes**

- a. Three componental Model of Attitude.
- b. Attitude, Consistency, Dissonance & Change  
(Formation, maintenance, and change in attitudes)
- c. Attitude change through persuasion.
- d. Influences on consistency



## 5. Aspects of Social Identity

- (I) The self
  - a. Nature of the self
  - b. Self concept
  - c. Social diversity
  - d. Self esteem
- (II) Other aspects of self-functioning
  - a. Self-focusing
  - b. Cognitive and affective aspects
  - c. Self-Monitoring
  - d. Self-Efficacy
- (III) Gender & socialization
- (IV) Interpersonal attraction and close relationships.

## 6. Social Influence

- a. Conformity
- b. Compliance
- c. Obedience

## 7. Pro-social Behavior

- a. Why do we help?
- b. When do we help?
- c. Does true altruism really exist?
- d. Whom do we help?
- e. How we can increase helping?

## 8. Aggression /hurting others

- a. What is Aggression?
- b. Influences on Aggression
- c. Reducing Aggression
- d. Lucifer effect
- e. Bullying

### Reading Material

1. Breckler, S.J., Olson, J.M., & Wiggins, E.C. (2006). *Social Psychology Alive* (First Edition). Belmont: Thomson Wadsworth.
2. Gilovich, Keltner, & Nisbett (2012). *Social Psychology* (3rd Ed).
3. Robert, C., & Carnevale, P. J. (1997). Group choice in ultimatum bargaining. *Organizational Behavior and Human Decision Processes*, 72(2), 256-279.
4. Eisenegger, C., Haushofer, J., & Fehr, E., (2011). The role of testosterone in social interaction. *Trends in cognitive sciences*, 15, 263-271.
5. Vezzali, L., Stathi, S., Giovannini, D., Capozza, D., & Trifiletti, E. (2014). The greatest magic of Harry Potter: Reducing prejudice. *Journal of Applied Social Psychology*

6. Conley, T. D., Ziegler, A., Moors, A. C., Matsick, J. L., & Valentine, B. (2013). A critical examination of popular assumptions about the benefits and outcomes of monogamous relationships. *Personality and Social Psychology Review*, 17, 124-141
7. Tracy, J. L., & Beall, A. T. (2011). Happy guys finish last: The impact of emotion expressions on sexual attraction. *Emotion*, 11(6), 1379
8. Falk, E. B., Berkman, E. T., Mann, T., Harrison, B., & Lieberman, M. D. (2010). Predicting persuasion- induced behavior change from the brain. *The Journal of Neuroscience*, 30(25), 8421-8424.
9. Salerno, J. M., & Peter-Hagene, L. C. (2013). The interactive effect of anger and disgust on moral outrage and judgments. *Psychological science*, 24, 2069-2078.
10. Aronson, E., Wilson, T.D., Akert, R.M., Fehr, B. *Social psychology* (current Canadian ed.).
11. Kendrick, D.T., Neuberg, S.L., Cialdini, R.B. *Social psychology: Goals in interaction* (current ed.).

**GC. 120 Sociology**

**GC – 120                      SOCIOLOGY                      Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Objective:**

The course is designed to introduce the students with sociological concepts and the discipline. The focus of the course shall be on significant concepts like social systems and structures, socio-economic changes, and social processes. The course will provide due foundation for further studies in the field of sociology.

**Course Outline**

**1. Introduction**

- a. Definition, Scope, and Subject Matter
- b. Sociology as a Science
- c. Historical back ground of Sociology

**2. Basic Concepts**

- a. Group, Community, Society
- b. Associations
  - i. Non-Voluntary
  - ii. Voluntary
- c. Organization i. Informal ii. Formal
- d. Social Interaction
  - i. Levels of Social Interaction
  - ii. Process of Social Interaction
    - a) Cooperation
    - b) Competition
    - c) Conflict
    - d) Accommodation
    - e) Acculturation and diffusion
    - f) Assimilation

g) Amalgamation

### **3. Social Groups**

a. Definition & Functions

b. Types of social groups

- i. In and out groups
- ii. Primary and Secondary group
- ii. Reference groups
- iii. Informal and Formal groups
- iv. Pressure groups

### **4. Culture**

a. Definition, aspects and characteristics of Culture

i. Material and non material culture

ii. Ideal and real culture

b. Elements of culture

i. Beliefs

ii. Values

iii. Norms and social sanctions

c. Organizations of culture

i. Traits

ii. Complexes

iii. Patterns

iv. Ethos

v. Theme

d. Other related concepts

i. Cultural Relativism

ii. Sub Cultures

iii. Ethnocentrism and Xenocentrism

iv. Cultural lag

### **5. Socialization & Personality**

a. Personality, Factors in Personality Formation

b. Socialization, Agencies of Socialization

c. Role & Status

### **6. Deviance and Social Control**

a. Deviance and its types

b. Social control and its need

c. Forms of Social control

d. Methods & Agencies of Social control

### **7. Collective Behavior**

a. Collective behavior, its types

- b. Crowd behavior
- c. Public opinion
- d. Propaganda
- e. Social movements
- f. Leadership

### **Recommended Books:**

1. Anderson, Margaret and Howard F. Taylor. 2001. Sociology the Essentials. Australia: Wadsworth.
2. Brown, Ken 2004. Sociology. UK: Polity Press
3. Giddens, Anthony 2002. Introduction to Sociology. UK: Polity Press.
4. Macionis, John J. 2006. 10th Edition Sociology New Jersey: Prentice-Hall
5. Tischler, Henry L. 2002. Introduction to Sociology 7th ed. New York: The Harcourt Press.
6. Frank N Magill. 2003. International Encyclopedia of Sociology. U.S.A: Fitzroy Dearborn Publishers
7. Macionis, John J. 2005. Sociology 10th ed. South Asia: Pearson Education
8. Kerbo, Harold R. 1989. Sociology: Social Structure and Social Conflict. New York: Macmillan Publishing Company.
9. Koenig Samuel. 1957. Sociology: An Introduction to the Science of Society. New York: Barnes and Nobel.
10. Lee, Alfred Mclung and Lee, Elizabeth Briant 1961. Marriage and The family. New York: Barnes and Noble, Inc.
11. Leslie, Gerald et al. 1973. Order and Change: Introductory Sociology Toronto: Oxford University Press.
12. Lenski, Gevbard and Lenski, Jeam. 1982. Human Societies. 4th edition New York: McGraw-Hill Book Company.
13. James M. Henslin. 2004. Sociology: A Down to Earth Approach. Toronto: Allen and Bacon.

### **GC. 121 Statistics**

**GC – 121                      Statistics                      Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

#### **Course Outline**

Meaning of Descriptive and Inferential statistics. Population and Sample. Types of variables, Measurement Scales. Sources of Statistical data in Pakistan. Description of data by frequency tables and graphs. Stem and Leaf plots and Box plots. Measures of Central Tendency. A.M. H.M. G.M., Mode, Median, Quantiles. Properties of Mean with proofs. Weighted Arithmetic Mean. Empirical Relation between Mean. Median and Mode. Relative Merits and Demerits of various averages. Measures of Dispersion: Absolute and Relative Measures, Range. Semi linear Quartile Range, Mean Deviation, Variance, Standard Deviation. Coefficient of Variation, Coefficient of Mean Deviation, Coefficient of Quartile Deviations, Properties of Variance and Standard Deviation with proofs. Standardized variables, Moments, Moment Ratios, Sheppards Correction, Kurtosis and Skewness.

#### **Index Numbers and Time Series**

- a) Construction and application of wholesale price Index Numbers. Fixed and chain base methods. Weighted Index Numbers (Laspeyre's, Paasche's Fisher's Ideal and Marshall-Edgeworth Indices). Tests for the consistency of Index Numbers Construction of Consumer price Index Numbers. Sensitive price Indicator.
- b) Time series. Components of a time series. Analysis of time series. Measurement of secular trend and seasonal variations by various methods. Deseasonalization of data.

### **Simple Regression and Correlation**

Logic of regression and correlation. Scatter diagram, simple linear regression model, least square estimators and their properties, standard error of estimate. Meaning and application of linear correlation coefficient. Properties of correlation co-efficient. Correlation coefficient for bi-varlate frequency distribution. Meaning derivation and application of Rank correlation, tied ranks.

### **Recommended Books**

1. Chaudhry, S.M. & Kamal, S. (2010). Introduction to Statistical Theory Part I, Ilmi Kitab Khana, Urdu Bazar, Lahore.
2. Wonnacott, T.H. and Wonnacott, R.J. (1998). Introductory Statistics, John Willy & Sons, New York.
3. Clarke G. & Cooke D. (1998). A basic Course in Statistics, Arnold Publisher, London, 4th Edition. BS (4 Years) for Affiliated Colleges Center for Undergraduate Studies, University of the Punjab
4. Crawshaw, J and Chambers, J. (2001). A concise course in advanced level Statistics with worked examples, Nelson Thornes, 4th Edition.
5. Graybill, Iyer & Burdick (1998). Applied Statistics, A first course in inference. Prentice Hall, New Jersey.
6. Beg, M.A. and Mirza, M.D. (2006). Statistics, Theory and Methods, Volume I, Carven Book House, Kutechery Road, Lahore.
7. Chase W. & Bown F. (1997). General Statistics, 3rd Edition, John Willy & Sons, New York.
8. Macfie, B.P. and Nufrio, P.M. (2006). Applied Statistics for public policy, Prentice Hall of India.
9. Blumen (1997), Elementary Statistics, 3rd Edition, McGraw Hill, New York.
10. Johnson, R.A. and Wichern, D.W. (2003). Business Statistics: Decision making with data, John Wiley & Sons Inc.
11. Levine, D.M., Kschbiel, T.C. and Berenson, M.L. (2003). Business Statistics: A first course, 3rd edition, Pearson Education.
12. Levin, J. and Fox, J.A. (2006). Elementary Statistics in Social Research, 10th edition, Pearson Education.

### **GC. 122 Botany**

**GC – 122**

**Botany**

**Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

### **Specific objectives of course:**

To familiarize the students with the diversity of nature. Importance of biodiversity for survival and proper functioning of ecosystems.

### **Course Outline:**

1. Biodiversity :

Definition, types and threats

2. Threats to Biodiversity; Deforestation, over grazing, erosion, desertification, ecosystem degradation, Environmental pollution and climate change
3. Biodiversity of Pakistan
4. Ecological services,  
Definition of ecological services. The types of ecological services and significance
5. Sustainable and unsustainable use of biological resources
6. International treaties/agreements regarding Biodiversity and conservation;  
CBD, CITES, Ramsar
7. Conservation vs preservation
8. Environmental Impact Assessment (EIA).

Basic concepts and Steps

### **Recommended Books:**

1. Abbasi, A. M., Khan, M. A., M. Ahmad and M. Zafar. 2012. Medicinal plant biodiversity of Lesser Himalaya Pakistan. Springer Publishers USA.
2. Hussain, F., 1991. Vegetation and ecology of lesser Himalaya. Department of Botany, Peshawar
3. Shinwari, M. I. and M. A. Khan. 1998. Ethnobotany of Margalla Hills. Department of Biological Sciences, Quaid-i-Azam University Islamabad Pakistan.
4. Shinwari, M. I., M. I. Shinwari and Shah, M. 2007. Medicinal Plants of Margalla Hills National Park Islamabad. Higher Education Commission Islamabad. Pp.218.
5. Provincial conservation strategies
6. Heywood, V. (ed.). 1995. Global Biodiversity Assessment. Published for the United Nations Environment Programme. Cambridge University Press, Cambridge, UK.
7. Falk, D. A. & Holsinger, K. E. 1991. Genetics and Conservation of Rare Plants. Center for Plant Conservation. Oxford University Press, Oxford, UK.
8. Frankel, O. H., Brown, A. H. D. & Burdon, J. J. 1995. The Conservation of Plant Biodiversity. Cambridge University Press, Cambridge, UK.
9. IUCN. 1994. IUCN Red List Categories. As Approved by the IUCN Council. IUCN.
10. Leadlay, E. and Jury, S. 2006 Taxonomy and Plant Conservation. CUP.
11. Bush, M. B. 1997 Ecology of a changing Planet. Prentice hall. New Jersey.
12. French, H. 2000 Vanishing Borders- protecting the Planet in the age of globalization. W. W. Norton & Co.
13. Swanson, T. 2005 Global Action for Biodiversity. Earth Scan Publication Ltd.
14. Taylor, P. 2005 Beyond Conservation. Earth Scan Publication Ltd.

**COURSE OUTLINE FOR COMPULSORY COURSES****Isl – 107 Islamic Studies (Compulsory) Cr. Hrs 02****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Objectives:**

This course is aimed at:

1. 1-To provide Basic information about Islamic Studies
2. 2-To enhance understanding of the students regarding Islamic Civilization
3. 3-To improve Students skill to perform prayers and other worships
4. To enhance the skill of the students for understanding of issues related to faith and religious life

**Introduction to Quranic Studies**

- 1) Basic Concepts of Quran
- 2) History of Quran
- 3) Uloom-ul -Quran

**Study of Selected Text of Holly Quran**

- 1) Verses of Surah Al-Baqra Related to Faith(Verse No-284-286)
- 2) Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)
- 3) Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)
- 4) Verses of Surah al-Furqan Related to Social Ethics (Verse No.63- 77)
- 5) Verses of Surah Al-Inam Related to Ihkam(Verse No-152-154)

**Study of Selected Text of Holly Quran**

- 1) Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No.6,21,40,56,57,58.)
- 2) Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment
- 3) Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No- 1,14)

**Seerat of Holy Prophet (S.A.W) I**

- 1) Life of Muhammad Bin Abdullah ( Before Prophet Hood)
- 2) Life of Holy Prophet (S.A.W) in Makkah
- 3) Important Lessons Derived from the life of Holy Prophet in Makkah

**Seerat of Holy Prophet (S.A.W) II**

- 1) Life of Holy Prophet (S.A.W) in Madina
- 2) Important Events of Life Holy Prophet in Madina
- 3) Important Lessons Derived from the life of Holy Prophet in Madina

**Introduction to Sunnah**

- 1) Basic Concepts of Hadith
- 2) History of Hadith
- 3) Kinds of Hadith
- 4) Uloom –ul-Hadith
- 5) Sunnah& Hadith
- 6) Legal Position of Sunnah

### **Selected Study from Text of Hadith**

#### Introduction to Islamic Law & Jurisprudence

- 1) Basic Concepts of Islamic Law & Jurisprudence
- 2) History & Importance of Islamic Law & Jurisprudence
- 3) Sources of Islamic Law & Jurisprudence
- 4) Nature of Differences in Islamic Law
- 5) Islam and Sectarianism

### **Islamic Culture & Civilization**

- 1) Basic Concepts of Islamic Culture & Civilization
- 2) Historical Development of Islamic Culture & Civilization
- 3) Characteristics of Islamic Culture & Civilization
- 4) Islamic Culture & Civilization and Contemporary Issues

### **Islam & Science**

- 1) Basic Concepts of Islam & Science
- 2) Contributions of Muslims in the Development of Science
- 3) Quran & Science

### **Islamic Economic System**

- 1) Basic Concepts of Islamic Economic System
- 2) Means of Distribution of wealth in Islamic Economics
- 3) Islamic Concept of Riba
- 4) Islamic Ways of Trade & Commerce

### **Political System of Islam**

- 1) Basic Concepts of Islamic Political System
- 2) Islamic Concept of Sovereignty
- 3) Basic Institutions of Govt. in Islam

### **Islamic History**

- 1) Period of Khlaft-E-Rashida
- 2) Period of Ummayyads
- 3) Period of Abbasids

### **Social System of Islam**

- 1) Basic Concepts of Social System of Islam
- 2) Elements Of Family
- 3) Ethical Values Of Islam

### **Recommended Books:**

- 1) Bhatia, H.S. (1989) "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi
- 2) Hassan, H.H. "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan.



- 3) Hasan, A. (1993) "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad.
- 4) Muhammad, H. "Emergence of Islam" IRI, Islamabad
- 5) Muhammad, H. 'Introduction to Islam Mulana Muhammad Yousaf Islahi,"
- 6) Waliullah, M. (1982) "Muslim Jurisprudence and the Quranic Law of Crimes" Islamic Book Service
- 7) Zia-ul-Haq, M. (2001) "Introduction to Al Sharia Al Islamia "Allama Iqbal Open University, Islamabad.

**Pak – 108                      Pak Studies (Compulsory)                      Cr. Hrs 02**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Introduction/Objectives**

Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.

Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

**Course Outline**

**1. Historical Perspective**

- a. Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-e-Azam Muhammad Ali Jinnah.
- b. Factors leading to Muslim separatism
- c. People and Land
  - i. Indus Civilization
  - ii. Muslim advent
  - iii. Location and geo-physical features.

**2. Government and Politics in Pakistan Political and constitutional phases:**

- a. 1947-58
- b. 1958-71
- c. 1971-77
- d. 1977-88
- e. 1988-99
- f. 1999 onward

**3. Contemporary Pakistan**

- a. Economic institutions and issues
- b. Society and social structure
- c. Ethnicity
- d. Foreign policy of Pakistan and challenges
- e. Futuristic outlook of Pakistan

**Recommended Books:**

1. Afzal, M. R. (1998) Political Parties in Pakistan, Vol. I, II & III. Islamabad: National Institute of Historical and cultural Research.
2. Amin, T. Ethno -National Movement in Pakistan, Islamabad: Institute of Policy Studies, Islamabad.

3. Aziz, K.K. (1976) Party, Politics in Pakistan, Islamabad: National Commission on Historical and Cultural Research.
4. Burki, S. J. (1980) State & Society in Pakistan, the Macmillan Press Ltd
5. Burke, S. M & Ziring, L. (1993) Pakistan's Foreign policy: An Historical analysis. Karachi: Oxford University Press.
6. Haq, N. (1993) Making of Pakistan: The Military Perspective. Islamabad:
7. Mehmood, S. (1994) Pakistan Political Roots & Development. Lahore.
8. Sayeed, K.B. (1967) the Political System of Pakistan. Boston: Houghton Mifflin.
9. Waseem, M. (1987) Pakistan under Martial Law, Lahore: Vanguard. National Commission of Historical and Cultural Research.
10. Wilcox, W. (1972) the Emergence of Bangladesh., Washington: American Enterprise, Institute of Public Policy Research.
11. Zahid, A. (1980) History & Culture of Sindh. Karachi: Royal Book Company. Zaidi, A.S. (2000) Issue in Pakistan's Economy. Karachi: Oxford University Press.
12. Ziring, L. (1980) Enigma of Political Development. Kent England: WmDawson& Sons Ltd.

**Eng-111 English I (Functional English)Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Objectives:**

Enhance language skills and develop critical thinking.

**Course Contents**

**Basics of Grammar**

Parts of speech and use of articles

Sentence structure,

Active and Passive voice

Practice in unified sentence

Analysis of phrase,

Clause and sentence structure

Transitive and intransitive verbs

Punctuation and spelling

**Comprehension**

Answers to questions on a given text

**Discussion**

General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)

**Listening**

To be improved by showing documentaries/films carefully selected by subject teachers

**Translation skills**

Urdu to English

**Paragraph writing**

Topics to be chosen at the discretion of the teacher

### **Presentation skills**

Introduction

Note: Extensive reading is required for vocabulary building

### **Recommended books:**

#### **1. Functional English**

##### **a) Grammar**

1. Thomson, A. J., & Martinet, A.V., (1997) Practical English Grammar, Exercises 1, Third edition. Oxford University Press, Oxford, ISBN 0194313492  
 2. Thomson, A. J., & Martinet, A.V.,(1997) Practical English Grammar, Exercises 2, Third edition, Oxford University Press, ISBN 0194313506

##### **b) Writing**

1. Boutin, M. C., Brinand, S. & Grellet, F., (1993) Writing. Intermediate, Oxford Supplementary Skills, Fourth Impression, ISBN 0 19 435405 7 Pages 20-27 and 35-41.

##### **c) Reading/Comprehension**

1. Tomlinson, B. & Ellis, R. (1992) Upper Intermediate, Oxford Supplementary Skills. Third Impression, ISBN 0 19 453402 2.

##### **d) Speaking**

### **Eng-112 English II (Communication Skills) Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

### **Objectives:**

Enable the students to meet their real life communication needs.

### **Course Contents**

#### **Paragraph writing**

Practice in writing a good, unified and coherent paragraph

#### **Essay writing**

Introduction

#### **CV and job application**

Translation skills

Urdu to English

#### **Study skills**

Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

#### **Academic skills**

Letter/memo writing, minutes of meetings, use of library and internet

#### **Presentation skills**

Personality development (emphasis on content, style and pronunciation) Note: documentaries to be shown for discussion and review

### **Recommended Books:**

#### **Communication Skills**

**a) Grammar**

1. Thomson, A. J. & Martinet, A. V. (1986) Practical English Grammar, Exercises 2., Third edition, Oxford University Press, ISBN 0 19 431350 6.

**b) Writing**

1. Boutin, M. C., Brinand, S. & Grellet, F., (1993) Writing. Intermediate, Oxford Supplementary Skills, Fourth Impression, ISBN 019 435405 7 Pages 45-53 (note taking). Nolasco, R. (1992) Writing. Upper-Intermediate, Oxford Supplementary Skills. Fourth Impression, ISBN 0 19 435406 5 (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing).

**c) Reading**

1. Tomlinson, B. & Ellis R., (1991) Oxford Supplementary Skills. Third Impression, ISBN 0194534030.

**Eng- 205 English III (Technical Writing and Presentation Skills) Cr. Hrs 03**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Objectives:**

Enhance language skills and develop critical thinking

**Course Contents**

Presentation skills

**Essay writing**

**Descriptive, narrative, discursive, argumentative Academic writing** How to write a proposal for research paper/term paper How to write a research paper/term paper (emphasis on style, content, language, form, clarity, consistency)

**Technical Report writing****Progress report writing**

Note: Extensive reading is required for vocabulary building

**Recommended Books:**

Technical Writing and Presentation Skills

**a) Essay Writing and Academic Writing**

2. Writing. Advanced by Ron White. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 435407 3 (particularly suitable for discursive, descriptive, argumentative and report writing).
3. College Writing Skills by John Langan. McGraw-Hill Higher Education. 2004.
4. Patterns of College Writing (4th edition) by Laurie G. Kirszner and Stephen R. Mandell. St. Martin's Press.

**b) Presentation Skills****c) Reading**

The Mercury Reader. A Custom Publication. Compiled by northern Illinois University. General Editors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharton. (A reader which will give students exposure to the best of twentieth century literature, without taxing the taste of engineering students).

**Eng- 206 English IV (Academic Reading and Writing) Cr. Hrs 03****BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore****Course Description**

This course aims at inculcating proficiency in academic writing through research. It guides students to develop a well-argued and well-documented academic paper with a clear thesis statement, critical thinking, argumentation and synthesis of information. This course also teaches students how to use different systems of citations and bibliography. It allows students to become independent and efficient readers armed with appropriate skills and strategies for reading and comprehending texts at undergraduate level.

**Course Objectives**

To enable the students to:

- Improve literal understanding, interpretation & general assimilation, and integration of knowledge
- Write well organized academic texts including examination answers with topic/thesis statement and supporting details.
- Write argumentative essays and course assignments

**Course Contents****Reading and Critical Thinking****1. Read academic texts effectively by:**

1. Using appropriate strategies for extracting information and salient points according to a given purpose
  2. Identifying the main points supporting details, conclusions in a text of intermediate level
  3. Identifying the writer's intent such as cause and effect, reasons, comparison and contrast, and exemplification.
  4. Interpreting charts and diagrams
  5. Making appropriate notes using strategies such as mind maps, tables, lists, graphs.
  6. Reading and carrying out instructions for tasks, assignments and examination questions
2. Enhance academic vocabulary using skills learnt in Compulsory English I course
3. Acquire efficient dictionary skills such as locating guide words, entry words, choosing appropriate definition, and identifying pronunciation through pronunciation key, identifying part of speech, identifying syllable division and stress patterns

**4. Writing Academic Texts:**

1. Plan their writing: identify audience, purpose and message (content)
2. Collect information in various forms such as mind maps, tables, charts, lists
3. Order information such as:
  - Chronology for a narrative
  - Stages of a process
  - From general to specific and vice versa
  - From most important to least important
  - Advantages and disadvantages
  - Comparison and contrast
  - Problem solution pattern

5. **Write argumentative and descriptive forms of writing using different methods of developing** ideas like listing, comparison, and contrast, cause and effect, for and against
- Write good topic and supporting sentences and effective conclusions
  - Use appropriate cohesive devices such as reference words and signal markers
6. **Redraft checking content, structure and language.**
7. **Edit and proof read**
8. **Grammar in Context**
- Phrase, clause and sentence structure
  - Combining sentences
  - Reported Speech

### **Recommended Readings**

1. Eastwood, J. (2004). English Practice Grammar (New edition with tests and answers). Karachi: Oxford University Press.
2. Fisher, A. (2001). Critical Thinking. C UP
3. Goatly, A. (2000). Critical Reading and Writing: An Introductory Course. London: Taylor & Francis
4. Hacker, D. (1992). A Writer's Reference. 2nd Ed. Boston: St. Martin's
5. Hamp-Lyons, L. & Heasley, B. (1987). Study writing: A course in written English for academic and professional purposes. Cambridge: Cambridge University Press.
6. Howe, D. H, Kirkpatrick, T. A., & Kirkpatrick, D. L. (2004). Oxford English for Undergraduates. Karachi: Oxford University Press.
7. Murphy, R. (2003?). Grammar in Use. Cambridge: Cambridge University Press.
8. Smazler, W. R. (1996). Write to be Read: Reading, Reflection and Writing. Cambridge: Cambridge University Press.
9. Wallace, M. (1992). Study Skills. Cambridge: Cambridge University Press.
10. Yorlky, R. Study Skills

### **COMPULSORY MATHEMATICS COURSES FOR BS (2 YEAR)**

**(FOR STUDENTS NOT MAJORING IN MATHEMATICS)**

**Math - 207 MATHEMATICS - I (ALGEBRA) Cr. Hrs 03**

**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Prerequisite(s):** Mathematics at secondary level

#### **Specific Objectives of the Course:**

To prepare the students, not majoring in mathematics, with the essential tools of algebra to apply the concepts and the techniques in their respective disciplines.

#### **Course Outline:**

##### **Preliminaries:**

Real-number system, complex numbers, introduction to sets, set operations, functions, types of functions.

##### **Matrices:**

Introduction to matrices, types, matrix inverse, determinants, system of linear equations, Cramer's rule.

##### **Quadratic Equations:**

Solution of quadratic equations, qualitative analysis of roots of a quadratic equations, equations reducible to quadratic equations, cube roots of unity, relation between roots and coefficients of quadratic equations.

**Sequences and Series:**

Arithmetic progression, geometric progression, harmonic progression.

**Binomial Theorem:**

Introduction to mathematical induction, binomial theorem with rational and irrational indices.

**Trigonometry:**

Fundamentals of trigonometry, trigonometric identities.

**Recommended Books:**

1. Dolciani MP, Wooton W, Beckenback EF, Sharron S, Algebra 2 and Trigonometry, 1978, Houghton & Mifflin, Boston (suggested text)
2. Kaufmann JE, College Algebra and Trigonometry, 1987, PWS-Kent Company, Boston
3. Swokowski EW, Fundamentals of Algebra and Trigonometry (6<sup>th</sup> edition), 1986, PWS-Kent Company, Boston

**Math - 208 MATHEMATICS - II (CALCULUS) Cr. Hrs 03**  
**BS Geography (5<sup>th</sup> to 8<sup>th</sup> Semester) Programme, University of the Punjab, Lahore**

**Prerequisite(s):** Mathematics I (Algebra)

**Specific Objectives of the Course:**

To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in their respective disciplines.

**Course Outline:**

**Preliminaries:**

Real-number line, functions and their graphs, solution of equations involving absolute values, inequalities.

**Limits and Continuity:**

Limit of a function, left-hand and right-hand limits, continuity, continuous functions.

**Derivatives and their Applications:**

Differentiable functions, differentiation of polynomial, rational and transcendental functions, derivatives.

**Integration and Definite Integrals:**

Techniques of evaluating indefinite integrals, integration by substitution, integration by parts, change of variables in indefinite integrals.

**Recommended Books:**

1. Anton H, Bevens I, Davis S, Calculus: A New Horizon (8<sup>th</sup> edition), 2005, John Wiley, New York
2. Stewart J, Calculus (3<sup>rd</sup> edition), 1995, Brooks/Cole (suggested text)
3. Swokowski EW, Calculus and Analytic Geometry, 1983, PWS-Kent Company, Boston
4. Thomas GB, Finney AR, Calculus (11<sup>th</sup> edition), 2005, Addison-Wesley, Reading, Ma, USA